INSTRUCTION MANUAL

MODEL 6300 AND 6301
CATV MODULATORS

Scientific-Atlanta, Inc.

When ordering parts from Scientific-Atlanta, Inc., be sure to include the equipment model number, equipment serial number, and a description of the part.

MODEL NO. _____

SERIAL NO. _____

SCIENTIFIC-ATLANTA, INC.
P. O. Box 13654, Atlanta, Ga. 30324

INSTRUCTION MANUAL

MODEL 6300 AND 6301
CATV MODULATORS

In all correspondence with Scientific-Atlanta concerning this publication, refer to 33R023Z.

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ADDENDUM

MODEL 6300-6301 MODULATOR

New Design Output Converter Module

The attached schematics, assembly drawings. and parts lists are up-to-date revisions of the output converter module now used in the Model 6300-6301 Modulators. These drawings supersede figures 8-3, 8-4, 8-12, and 8-13 in addition to the respective parts sists for figures 8-3 and 8-4.

The alignment procedure for the new model converter follows closely that for the mid-band output converter. paragraph 5.6.5 page 5-35 of the manual.

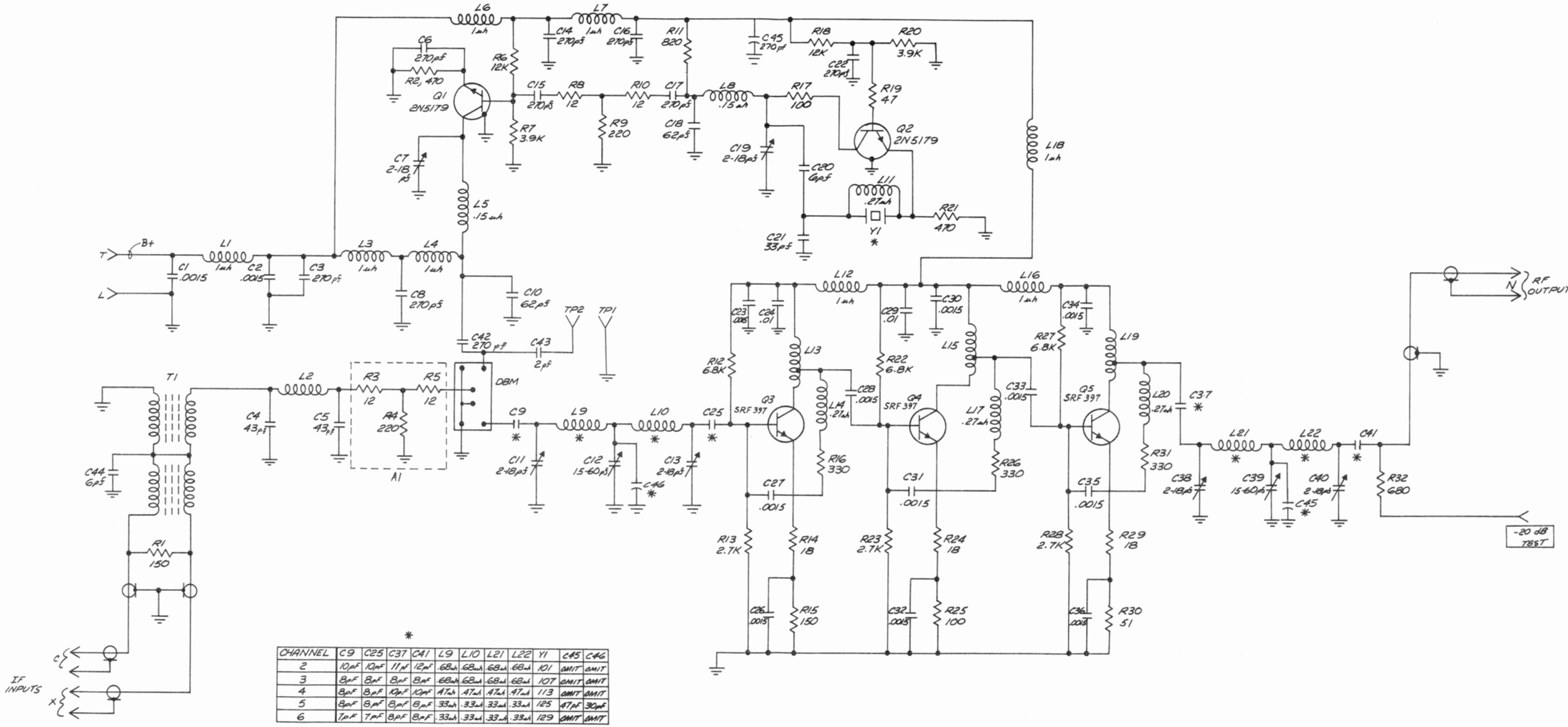
6300 OUTPUT CONVERTER

Low-Band Channels #2 through #6

Channel #2 Typical for all low-band converters	Schematic	123086
	P. C. Assembly	123402
	Parts Lists	123420

High-Band Channels #7 through #13

Channel #7 Typical for high-band channels	Schematic	123085
	P. C. Assembly	123407
	Parts Lists	123425



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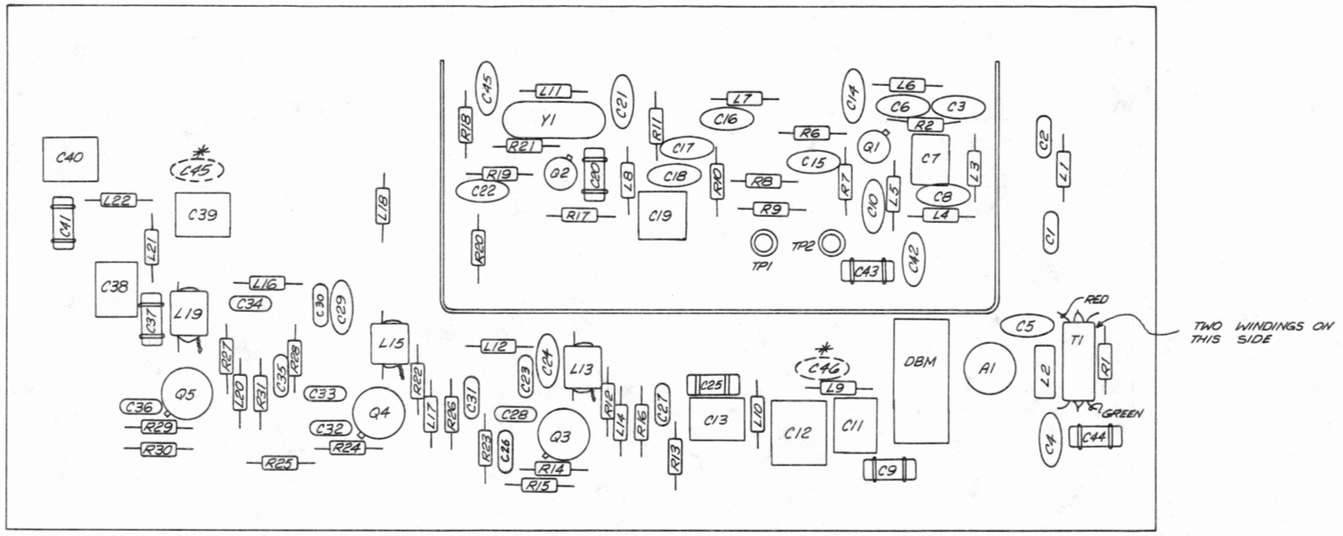
CHANNEL	C9	C25	C37	C41	L9	L10	L21	L22	Y1	C45	C46
2	10pF	10pF	11pF	12pF	.68uh	.68uh	.68uh	.68uh	101	OMIT	OMIT
3	8pF	8pF	8pF	8pF	.68uh	.68uh	.68uh	.68uh	107	OMIT	OMIT
4	8pF	8pF	10pF	10pF	.47uh	.47uh	.47uh	.47uh	113	OMIT	OMIT
5	8pF	8pF	8pF	8pF	.33uh	.33uh	.33uh	.33uh	125	47pF	30pF
6	7pF	7pF	8pF	8pF	.33uh	.33uh	.33uh	.33uh	129	OMIT	OMIT

Drawing D123086B. Output Converter
Low Band Schematic



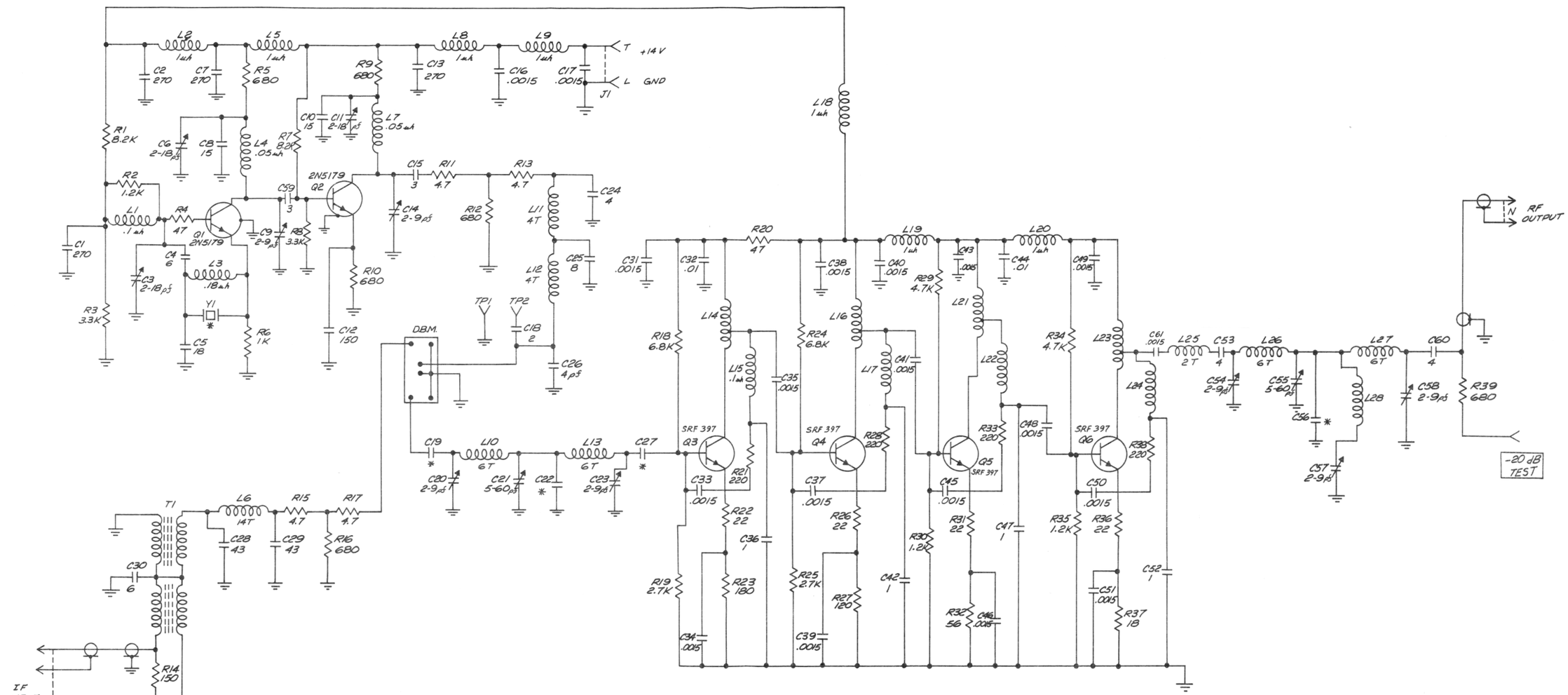
SEE SEPARATE PARTS LIST

NOTE:
*USED ON CH.5 ONLY

Drawing D123402-123406B. Output Converter Low Band PC Board Assembly

ASSEMBLY 0123420 OUTPUT CONVERTER ASSY CH2 6300

ITEM	COMPONENT	DESCRIPTION	QTY	UM	MFR	FSCM	MFR PART NUMBER
1	0123402	PC BOARD ASSY CH2 OUTPUT CONVERTER 6300	1	EA			
2	0105279	CHASSIS PLUG-IN RF CONNECTOR MODULATOR	1	EA			
3	0106102	PANEL FRONT OUTPUT CONVERTER CH 2	1	EA			
4	0106037	HANDLE FRONT PANEL PLUG-IN	2	EA			
5	0106024	PLATE SLIDE PLUG-IN MODULATOR	1	EA			
6	0106022	PANEL SIDE PLUG-IN	1	EA			
7	0080368	CONN COAX F FEM TO TERM THREADED DBL D	1	EA	CEL	23770	CF-61A
8	0078531	CONN RECT BODY W/O CONTACTS 20 POS PLUG	1	EA	BDW	09922	MS20PM-61
9	0078532	CONN CONTACT MALE COAX CRIMP .1 D CABLE	3	EA	BDW	09922	RCDXK-1
10	0078535	CONN CONTACT FEMALE CRIMP NO. 24 WIRE	3	EA	BDW	09922	RC24M-9
11	0077322	SCREW 4-40 X 1/4 PAN HD,TAPTITE,CAD PLT	8	EA	CS	72228	BY DESCRIPTION
12	0072321	SCREW 4-40 X 3/8 F HD,82 DEG,SST	4	EA	XZ		PER MS51959-15
13	0072310	SCREW 4-40 X 3/16 F HD,82 DEG,SST,UNDRCT	12	EA	XZ		PER MS51959-12



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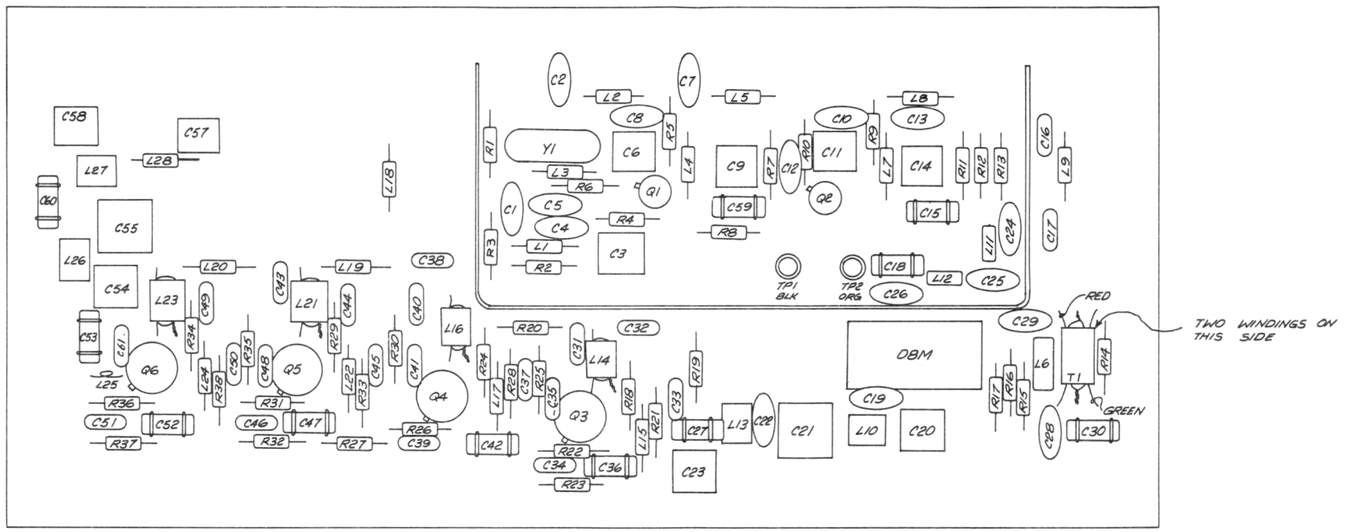
CHANNEL	C19	C27	C22	C56	Y1
7	3pF	4pF	24pF	24pF	110.5
8	3pF	4pF	24pF	24pF	113.5
9	3pF	4pF	24pF	24pF	116.5
10	3pF	4pF	24pF	24pF	119.5
11	2.2pF	3pF	OMIT	OMIT	122.5
12	2.2pF	3pF	OMIT	OMIT	125.5
13	2.2pF	3pF	OMIT	OMIT	128.5

Drawing D123085. Output Converter
High Band Schematic



SEE SEPERATE PARTS LIST

Drawing D123407-123413. Output
Converter High Band
PC Board Assembly

ASSEMBLY 0123425 OUTPUT CONVERTER ASSY CH7 6300

ITEM	COMPONENT	DESCRIPTION	QTY	UM	MFR	FSCM	MFR PART NUMBER
1	0123407	PC BOARD ASSY CH7 OUTPUT CONVERTER 6300	1	EA			
2	0105279	CHASSIS PLUG-IN RF CONNECTOR MODULATOR	1	EA			
3	0106107	PANEL FRONT OUTPUT CONVERTER CH 7	1	EA			
4	0106037	HANDLE FRONT PANEL PLUG-IN	2	EA			
5	0106024	PLATE SLIDE PLUG-IN MODULATOR	1	EA			
6	0106022	PANEL SIDE PLUG-IN	1	EA			
7	0080368	CONN COAX F FEM TO TERM THREADED DBL D	1	EA	CEL	23770	CF-61A
8	0078531	CONN RECT BODY W/O CONTACTS 20 POS PLUG	1	EA	BDW	09922	MS20PM-61
9	0078532	CONN CONTACT MALE COAX CRIMP .1 D CABLE	3	EA	BDW	09922	RCDXK-1
10	0078535	CONN CONTACT FEMALE CRIMP NO. 24 WIRE	3	EA	BDW	09922	RC24M-9
11	0077322	SCREW 4-40 X 1/4 PAN HD,TAPTITE,CAD PLT	8	EA	CS	72228	BY DESCRIPTION
12	0072321	SCREW 4-40 X 3/8 F HD,82 DEG,SST	4	EA	XZ		PER MS51959-15
13	0072310	SCREW 4-40 X 3/16 F HD,82 DEG,SST,UNDRCT	12	EA	XZ		PER MS51959-12

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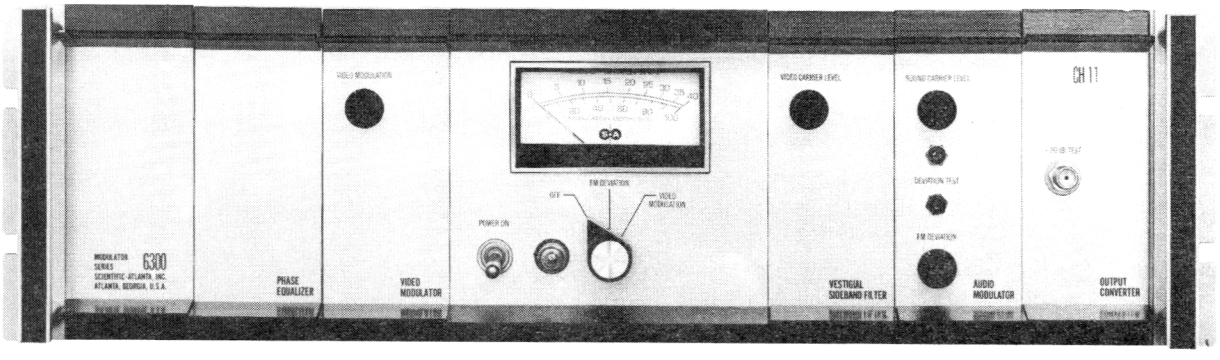


Figure 1-1. Model 6300 CATV Modulator

SECTION 1
GENERAL INFORMATION

1.1 GENERAL

The purpose of this instruction manual is to facilitate installation, operation, and maintenance of the Scientific-Atlanta Model 6300 and 6301 CATV Modulators.

1.2 PURPOSE OF MODULATOR

The purpose of the Modulator in a CATV system is to accept a source of video and audio or video and 4.5 MHz FM and convert either of these inputs into a standard television RF signal. The source of information may be a camera, a demodulator, or a microwave relay output. Because the CATV modulator performs the same function as a television transmitter, its specifications, with the exception of output power, must conform closely to those of a TV transmitter.

1.3 MODEL IDENTIFICATION

Two models and two options of the Scientific-Atlanta CATV Modulator are available. The Model 6300 Modulator accepts a video source and a 600-ohm balanced audio source. The balanced audio input is first converted to a 4.5 MHz FM subcarrier signal then further converted to a 41.25 MHz sound IF signal. The sound IF signal (41.25 MHz) and a vestigial video IF signal (45.75 MHz) are then further converted to a standard CATV channel frequency. The Model 6301 modulator accepts a video source and a 4.5 MHz FM subcarrier source or a composite video and 4.5 MHz FM subcarrier source. The combined or separate sources are then converted to video and sound IF frequencies and further converted to a standard CATV channel frequency. Additionally, there is available a "phase-lock" option for either the Model 6300 or the 6301 Modulator. This option is identifiable by the letters "PL" after the model number. The purpose of the phase-lock option is to minimize the co-channel interference produced between the modulator output signal and direct pickup (due to insufficient shielding in the subscriber television receiver) of an OFF-THE-AIR signal.

A low-pass filter option is designated with the letters "LP" after the model number. This option is used in conjunction with video sources which have frequency components above 4 MHz. A video character generator is an example of such a device. The low-pass filter is designed to minimize ringing due to those frequency components which extend above the system bandwidth. The "Low-Pass Filter" Module replaces the "Phase Equalizer Module (A1) in the "LP" options.

1.4 GENERAL DESCRIPTION

The Model 6300 and 6301 Modulators are comprised of a main chassis assembly with seven plug-in subassemblies (the power supply and meter circuit are contained in a single module). The subassemblies are:

a. Phase Equalizer or Low-Pass Filter LP option only (A1)

b. Video Modulator (A2)

c. Power Supply (A3) and Meter Circuit (A4)

d. Vestigial Sideband Filter (A5)

e. Audio Modulator (A6) 6300 only; or 4.5 MHz Converter (A6A) 6301 only

f. Output Converter (A7)

g. Phase-Lock, PL option only

Modular Construction characteristic to the 6300 and 6301 greatly simplifies changing channels, changing options, and minimizes down time due to module failure.

1.5 TECHNICAL CHARACTERISTICS

The technical characteristics for the Model 6300 and 6301 Modulators are listed in Table 1-1.

TABLE 1-1. TECHNICAL CHARACTERISTICS

Characteristic	Specification
Video	
Input Type	Composite video, sync negative
Input Level	0.5V peak-to-peak min for 87.5% depth of modulation
Input Impedance	75 ohm, unbalanced; VSWR = <1.2:1
Output Impedance	75 ohm; VSWR = <1.35:1
Output Level	+40 dBmV to +60 dBmV continuously variable
Output Frequency	Any standard VHF channel, 2-13; mid-band, A-I; super-band, J-M (transposed video-sound available upon request)
Frequency Tolerance	.005% at 77°F ±5°F
Frequency Stability	±.01% between +40°F to +140°F
Frequency Response	±.5 dB from 10 Hz to 4.2 MHz
Vestigial Sideband Response	Lower adjacent channel sound carrier: -35 dB; Video carrier - 3.58 MHz: -42 dB. Uper adjacent channel video carrier: -35 dB
Group Delay Response	Meets FCC predistortion requirements for color transmission
Modulation Capability	0 to 90%, continuously variable. White level limit present to 10% of sync tip level, adjustable from 0 to 50% of sync tip level
Differential Gain	±.5 dB maximum at 87.5% modulation
Differential Phase	±1.5° maximum at 87.5% modulation
Hum and Noise	60 dB down with respect 90% modulation level
Tilt	1% maximum on 60 Hz, 50% square wave
Sound	
Output Level	+25 dBmV to +45 dBmV continuously variable
% AM on FM Sound Carrier	<2%
Audio Input (Model 6300 only)	
Input Level	-10 dBm (approximately 258 mV rms) minimum for 25 Hz deviation

TABLE 1-1. TECHNICAL CHARACTERISTICS-continued

Characteristic	Specification
Input Impedance	600 ohm balanced, 600 ohm unbalanced, optional
Frequency Response	±1 dB from 50 Hz to 15 kHz, 75 μsec preemphasis
Harmonic Distortion	1.5% maximum, 50 Hz to 15 kHz at 25 kHz deviation
FM Hum and Noise	60 dB down with respect to 25 kHz deviation
Frequency Tolerance	Within ±250 Hz of being 4.5 MHz above video carrier at 77°F ±5°F
Frequency Stability with Modulation	Less than ±500 Hz carrier shift with deviation up to 25 Hz
Frequency Stability with Temperature	±1 K maximum between +40°F to +140°F
Modulation Range	0 to 40 kHz continuously variable
4.5 MHz FM Input (Model 6301 only)	
Input Level	10 mV rms to 500 mV rms
Input Impedance	75 ohm unbalanced, VSWR <1.5:1
General Specifications for Modulator	
Spurious Outputs	60 dB below video carrier in any VHF TV channel with video carrier at +55 dBmV and sound carrier at +40 dBmV. 50 dB below full rated output at any frequency from 50 MHz to 250 MHz
Video IF Out	+5 dBmV to +25 dBmV, VSWR <1.15:1, output level directly related to video RF output level
Sound IF Out	-10 dBmV to +10 dBmV, VSWR <1.15:1, output level directly related to video RF output level
Meter Accuracy	Video carrier modulation depth in % <5% of full scale deflection
	FM deviation in kHz. 10% of full scale deflection
Power Input	100V ac, -130V ac, 50 Hz, -60 Hz, 10 watts
Power Supply Output	±15V dc
Weight	20 pounds net

TABLE 1-1. TECHNICAL CHARACTERISTICS-continued

Characteristic	Specification
Size	
Height	5-1/4 in
Depth	16 in
Width	19 in
Rack Mounting Slides	19 in (optional)

SECTION 2
INSTALLATION

2.1 GENERAL

This section contains information required to unpack and install the Model 6300 and 6301 Modulators. Refer to section 3 for interface connections.

2.2 UNPACKING AND INSPECTION

Exercise caution when unpacking the modulator. Carefully open the carton and inspect the unit for shipping damage. Compare the items received against the packing list. Check all packing for small components that may have been wrapped separately. If a claim for damage or missing components is to be made, save the packing materials and shipping carton to substantiate the claim. Immediately file the claim with the carrier and notify Scientific-Atlanta. Do not return the unit until shipping instructions have been received from the factory.

2.3 INSTALLATION

2.3.1 MOUNTING

The instrument is designed for rack mounting, either directly into the rack or on rack-mount slides (optional). It should therefore be mounted in a rack permitting some access to the rear of the unit. The modulator should be free from RF radiations emanating from nearby equipment or from line transients capable of damaging the instrument. The units should not be installed in extreme environmental conditions.

SECTION 3
OPERATION

3.1 GENERAL

This section contains the basic operating instructions and procedures for the Model 6300 and 6301 Modulators.

3.2 CONTROLS AND INDICATORS

Familiarity with each front panel control and its function should precede the application of power to the modulator. Functional descriptions for each control, indicator, test point, and interface connection are given in table 3-1. Reference should be made to figure 3-1.

TABLE 3-1. CONTROLS, INDICATORS AND TEST POINTS

Name	Function
POWER ON Switch	Applies ac power to the power supply step-down transformer.
VIDEO MODULATION	Controls the level of video modulation as monitored by the meter.
VIDEO CARRIER LEVEL	Controls the output level of the picture carrier.
METER FUNCTION Switch	Selects the function to be monitored by the meter.
OFF	The meter is disconnected from all circuits.
FM DEVIATION	The meter monitors frequency deviation in kHz of the sound carrier. The deviation is indicated on the upper meter scale.
VIDEO MODULATION	The meter monitors the percentage of video modulation. The percent of modulation is indicated on the lower meter scale.
SOUND CARRIER LEVEL	Controls the output level of the sound carrier.
FM DEVIATION (Model 6300 Only)	Controls the frequency deviation of the sound carrier.

TABLE 3-1. CONTROLS, INDICATORS AND TEST POINTS-continued

Name	Function
Indicators	
PILOT LAMP	Indicates application of 60 Hz power to the power supply transformer.
METER	Monitors frequency deviation of the sound carrier and percent of modulation of the picture carrier.
Test Points	
DEVIATION (Model 6300 Only)	Monitors the audio across the varactor diode in the 4.5 MHz FM subcarrier generator.
-20 dB TEST	Monitors the actual TV channel RF signal. The test point level is 20 dB below the RF out (J9) level.
Rear Chassis Apron Connectors and Controls	
RF OUT (J9)	Output of a vestigial sideband TV signal on a specific CATV channel. This connector accepts an F-Type male connector.
BALANCED AUDIO INPUT (J5)	Input for audio signal (Model 6300 only). This connector accepts dual banana plugs.
4.5 MHZ OR VIDEO AND 4.5 MHZ (J6)	Input connector for 4.5 MHz subcarrier or composite video and 4.5 MHz subcarrier (Model 6301 only). This connector accepts a male UHF connector.
SOUND IF OUT (J8)	This connector makes available a standard 41.25 MHz sound IF signal for feeding other equipment with 45 MHz IF amplifiers. The connector accepts a male F-Type connector.
VIDEO IF OUT (J10)	This connector makes available a standard 45.75 MHz vestigial video IF signal for feeding other equipment with 45 MHz IF amplifiers. The connector accepts a male F-Type connector.
VIDEO IF IN (J4)	Input for an external source of sound (41.25 MHz) and video (45.75 MHz) IF signals. The external source is selected by means of the test point connector XA8. Pins marked "RELAY COIL" and "COM" should be shorted together for external source selection. The VIDEO IF IN connector accepts a male F-Type connector.

TABLE 3-1. CONTROLS, INDICATORS AND TEST POINTS-continued

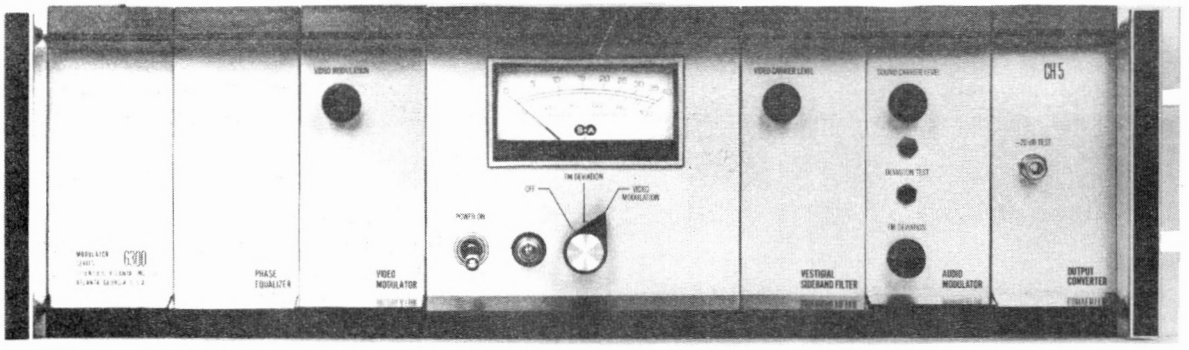
Name	Function
VIDEO IN (J1)	Input for video signal source. The connector accepts a male UHF connector.
RF IN (J11)	Input connector for antenna RF signal (used on phase-lock "PL" options only). This connector accepts a male F-Type connector.
VIDEO AND 4.5 MHZ Switch	If a combined video and 4.5 MHz FM subcarrier signal is fed to the modulator the switch should be in the "COMBINED" position. If separate video and 4.5 MHz FM subcarrier signals are fed to the modulator the switch should be in the "SEPARATE" position. (Functional only on Model 6301.)
Test Points (XA8)	
B+	This test point monitors the regulated positive output voltage from the internal power supply.
B-	This test point monitors the regulated negative output voltage from the internal power supply.
RELAY COIL	Direct connection to coil of relay A5K1 in the vestigial sideband filter.
COM	Power supply common (chassis ground).

3.3 INTERFACE CONNECTIONS

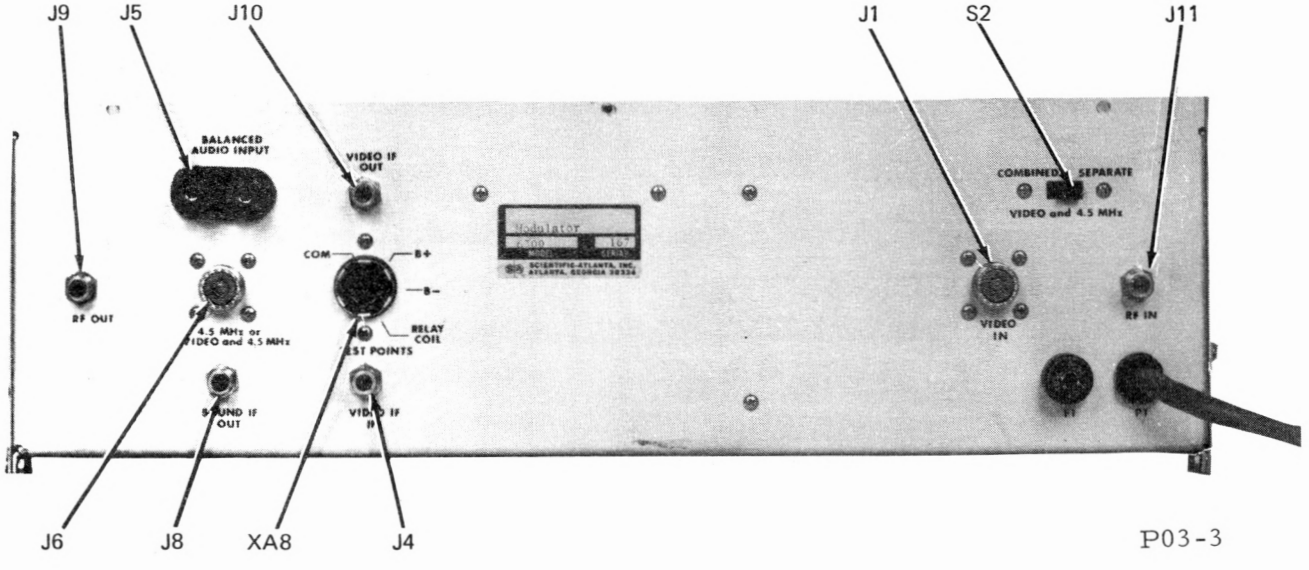
3.3.1 MODEL 6300 MODULATOR

The Model 6300 Modulator is designed to accept a negative sync composite video signal. The video source should be connected directly to the rear panel "VIDEO IN" connector (J1). The minimum input level is 0.5V peak-to-peak and is the minimum level of video required to produce a depth of modulation of 87.5%. The maximum input level should not exceed 2V peak-to-peak.

The audio input is designed to accept a 600-ohm balanced source. The minimum input level is 285 mV rms (-10 dB) and is the minimum level of audio required to produce an FM deviation of 25 kHz. The audio source should be connected directly to the "BALANCED AUDIO INPUT" banana jack (J5) on the rear chassis apron of the modulator.



P03-2



P03-3

Figure 3-1. Model 6300 CATV Modulator, Controls and Indicators

The composite RF output is available at the "RF OUT" Connector (J9) on the modulator rear panel. The video carrier level is continuously variable from +40 dBmV to +60 dBmV and depends on the setting of the "VIDEO CARRIER LEVEL" control located on the front panel of the vestigial sideband filter. The sound carrier level is continuously variable from +25 dBmV to +45 dBmV and depends on the setting of the "SOUND CARRIER LEVEL" control located on the front panel of the Audio Modulator.

3.3.2 MODEL 6301 MODULATOR

The Model 6301 Modulator accepts a video and a 4.5 MHz FM subcarrier input or a combined video and 4.5 MHz FM subcarrier input. For combined video and subcarrier input, connect the composite signal to the rear chassis apron connector marked "4.5 MHz or VIDEO and 4.5 MHz" (J6). Place the rear chassis apron switch marked "COMBINED-SEPARATE-VIDEO and 4.5 MHz" in the "COMBINED" position. Minimum input levels are 0.5V peak-to-peak for video and 10 mV rms for the 4.5 MHz subcarrier. For separate video and 4.5 MHz inputs connect the video source to the rear chassis apron connector marked "VIDEO IN" (J1) and the 4.5 MHz FM subcarrier input to the rear chassis apron connector marked "4.5 MHz or VIDEO and 4.5 MHz" (J6). The rear chassis apron "COMBINED-SEPARATE-VIDEO and 4.5 MHz" switch should be placed in the "SEPARATE" position. Minimum input levels are again 0.5V peak-to-peak for video and 10 mV rms for the 4.5 MHz FM subcarrier.

Composite RF output interface is the same as described for the Model 6300 in paragraph 3.3.1.

3.3.3 AUXILIARY INPUTS AND OUTPUTS FOR MODEL 6300 AND 6301

A sample of the vestigial sideband filter IF output is available at the rear chassis apron connector marked "VIDEO IF OUT" (J10). A sample of the sound IF signal is available at the rear chassis apron connector marked "SOUND IF OUT" (J8). These outputs can be used to provide IF signals to a heterodyne signal processor to replace absent OFF-THE-AIR signals.

The vestigial sideband filter module is designed to accept an alternate combined video IF and sound IF carrier input. The alternate input should be connected to the rear chassis apron connector marked "VIDEO IF IN" (J4). An internal relay is provided to minimize auxiliary switching equipment. By shorting together the pins marked "RELAY COIL" and "COM" of the rear apron test point connector XA8

the 45.75 MHz internal oscillator is disabled and the alternate IF signal is fed to the vestigial sideband filter.

3.4 OPERATING PROCEDURES

Prior to turning on the modulator, ensure that it has been properly interfaced for its particular application. Ensure that all modules are properly plugged in and that the power cord is plugged into primary power. Perform the following procedures for operation:

a. Switch the "POWER ON" switch to the "POWER ON" position. The pilot lamp should come on.

b. Turn the meter function switch to "VIDEO MODULATION" and adjust the "VIDEO MODULATION" control for the desired level of video modulation as indicated on the lower scale of the meter. To prevent overmodulation it is recommended that the level of video modulation be set such that the highest peaks of video do not modulate in excess of 87.5%.

c. Set the meter function switch to "FM DEVIATION" and check the deviation as indicated on the upper scale of the meter. For the Model 6301 this meter function serves only to monitor the existing signal input deviation. For the Model 6300 adjust the "FM DEVIATION" control until the desired level of deviation is obtained. To prevent overmodulation it is recommended that the deviation be set such that the highest peaks of audio do not produce deviation in excess of 25 kHz.

d. With a suitable field strength meter connected to the rear chassis apron connector marked "RF OUT" (J9) adjust the "VIDEO CARRIER LEVEL" control for the desired video carrier level. Adjust the "SOUND CARRIER LEVEL" control for the desired sound carrier level.

SECTION 4
THEORY OF OPERATION

4.1 GENERAL

The theory of operation of the CATV Modulator is discussed in this section. The schematic diagram is shown in figure 4-1 and the block diagram of the modulator is shown in figure 6-1.

4.2 VIDEO PHASE EQUALIZER

The video signal enters the modulator through a video phase equalizer. The function of the equalizer is to predistort the phase-versus-frequency characteristics of the video signal to conform to the standard FCC predistortion requirements for color transmission. This predistortion is necessary to compensate for the envelope delay characteristics of the "average home television receiver."

4.2.1 VIDEO MODULATOR

The video signal enters the video modulator module through a second phase-equalization network which compensates for delay errors introduced by the vestigial sideband filter and other filters in the modulator itself.

The video signal is amplified and the synchronizing pulses are clamped to a reference level to insure that the sync tip level applied to the video modulator circuit does not vary with the average brightness content of the video signal. The possibility of "sync buzz" due to video over-modulation is eliminated by a white level clipper circuit which limits video modulation to a maximum of 90 percent.

The video modulator accepts the video signal and modulates this information on a crystal controlled 45.75 MHz IF carrier. Differential gain and differential phase are minimized through the use of a "Cowan bridge" type modulator circuit.

4.2.2 VESTIGIAL SIDEBAND FILTER

The output of the video modulator contains both the upper and lower sidebands. The vestigial sideband filter, operating at IF frequency, passes the lower sideband

and rejects all but a small portion of the upper sideband conforming to the standard TV channel bandwidth. The vestigial sideband filter also has provisions to accept a combined video and sound IF signal from an external source. When signals from an external source are being used, the 45.75 MHz oscillator is automatically disabled. The output of the vestigial sideband filter goes to the output converter for conversion to the desired VHF television channel.

A sample of the vestigial sideband filter output is available at the rear of the chassis. This output can be used to provide IF signals to a heterodyne signal processor to replace absent off-the-air signals.

4.2.3 AUDIO MODULATOR (MODEL 6300 ONLY)

The Model 6300 Modulator accepts balanced audio and converts this signal to a 4.5 MHz FM subcarrier signal. The 4.5 MHz sound subcarrier frequency accuracy is maintained within ±1 KC by use of a unique crystal controlled comparator circuit. The 4.5 MHz FM subcarrier is applied to a balanced modulator along with a sample from the 45.75 MHz oscillator. The output of the modulator is first fed through a filter network tuned to 41.25 MHz, which rejects the unwanted sideband, then to the output converter.

A portion of the sound IF signal is available at the rear of the chassis, along with the video IF signal.

4.2.4 4.5 MHZ CONVERTER (MODEL 6301 ONLY)

The Model 6301 Modulator accepts a direct 4.5 MHz FM subcarrier input or a composite 4.5 MHz FM subcarrier and video input. The 4.5 MHz FM subcarrier is amplified and applied to the balanced modulator. The video portion of a composite input is separate from the 4.5 MHz FM subcarrier and applied to the video phase equalizer input.

4.2.5 OUTPUT CONVERTER

The sound and video IF signals are up-converted in separate converters and then combined at the desired output frequency in a passive device. This technique minimizes the generation of spurious outputs.

4.2.6 METER CIRCUIT

Samples of the 4.5 MHz FM subcarrier signal and video IF signal are provided to the meter circuit. Depending on the position of a front-panel switch, the calibrated meter on the front panel will indicate FM deviation in KC, or AM modulation in percent.

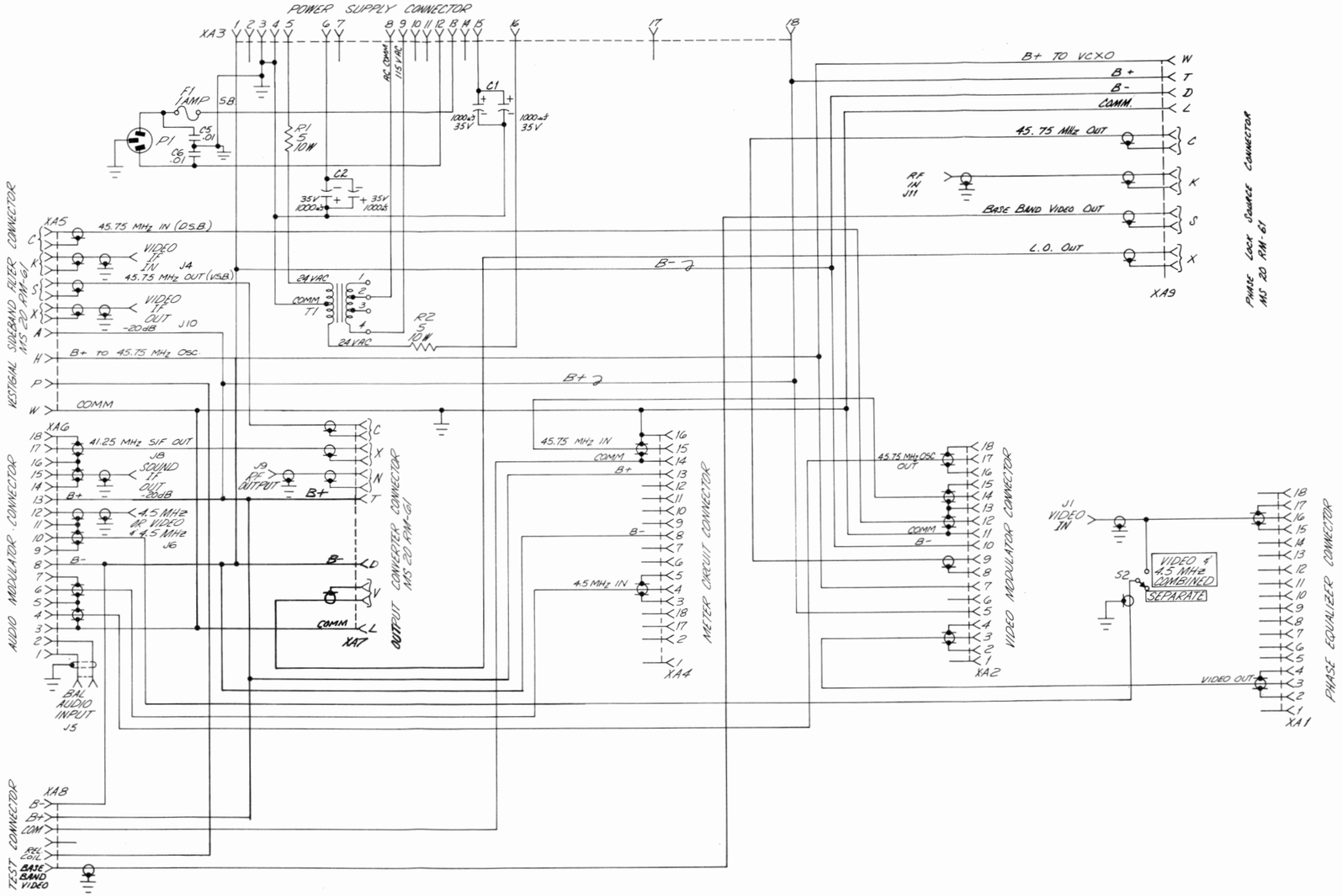


Figure 4-1. Model 6300 Modulator, Schematic Diagram

SECTION 5
MAINTENANCE

5.1 GENERAL

Section 5 contains the information necessary to maintaining the Model 6300 and 6301 Modulators. Periodic preventive maintenance is not necessary and is not recommended. Therefore, the information in section 5 primarily relates to repair and test of those units where component failures have occurred. The following paragraphs present factory approved test and calibration procedures along with information related to the location of all electrical components. Means of access to the main chassis and plug-in modules are also included.

5.2 COMPONENT LOCATION AND ACCESS

The majority of components used in the Model 6300 and 6301 Modulators are located on the plug-in module PC boards. However, the heavier components of the power supply, along with chassis wiring and interconnecting cables, are located in a small compartment at the rear of the main chassis. On early models of the modulators, access to this compartment was gained by means of a small panel located on the top rear of the main chassis. However, on later models, the small panel has been eliminated and access is gained by removing the entire top cover. Schematic component designations are indicated for each physical component; these are illustrated in figures 5-1 through 5-12 and figures 8-10 through 8-19. Access to the components located on the plug-in module PC boards can be gained by removing the plug-in module side covers.

CAUTION

The large side cover on the plug-in modules prevent incorrect installation of the module into the main chassis. However, with the large side cover removed it is possible to install some of the modules upside down. In particular, use extreme care when handling the power supply and meter circuit modules (A3, A4). Upside down installation of this module applies AC line voltage directly to the meter circuit PC board, a condition which may result anytime AC line voltage is applied to the main chassis.

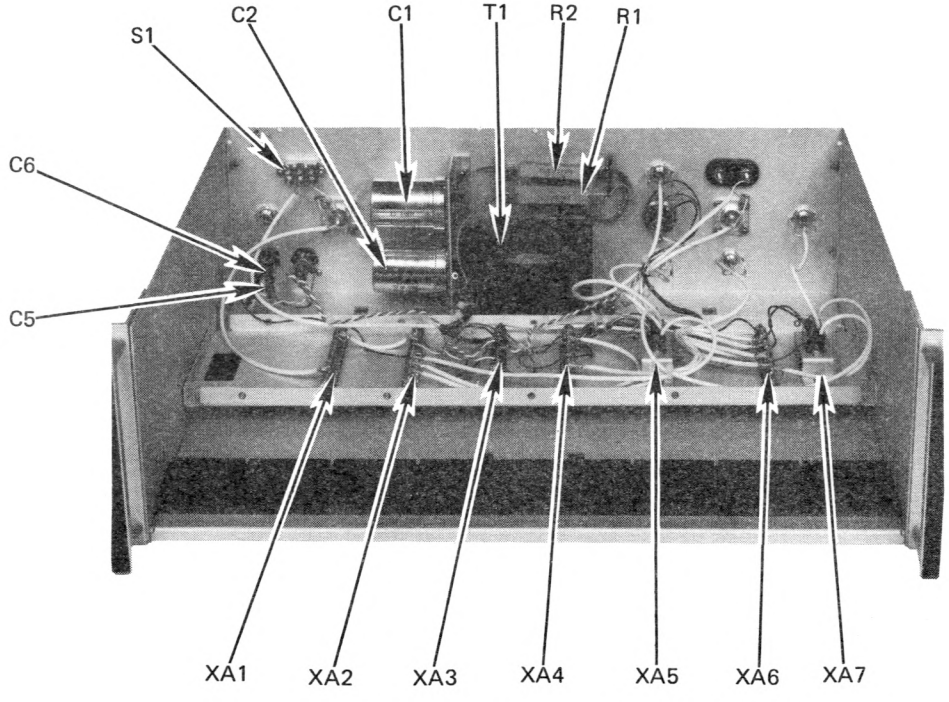


Figure 5-1. Modulator Main Chassis P05-6

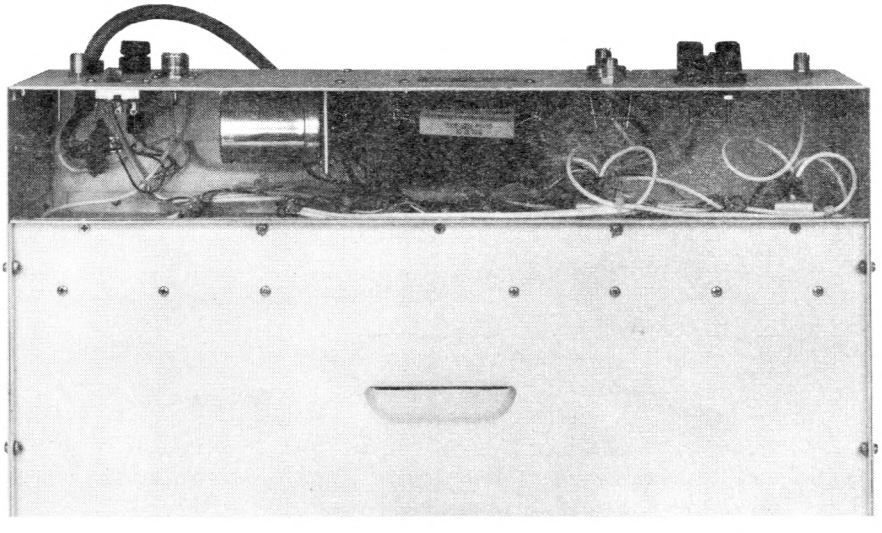


Figure 5-2. Modulator Chassis Wiring

P03-4

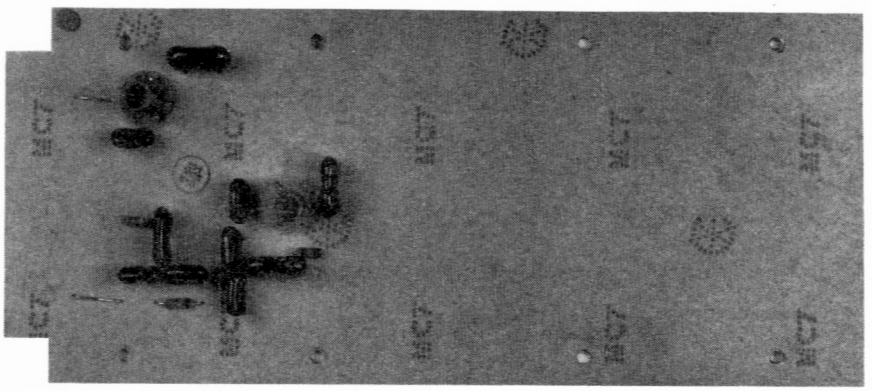


Figure 5-3. Phase Equalizer (A1) P03-7

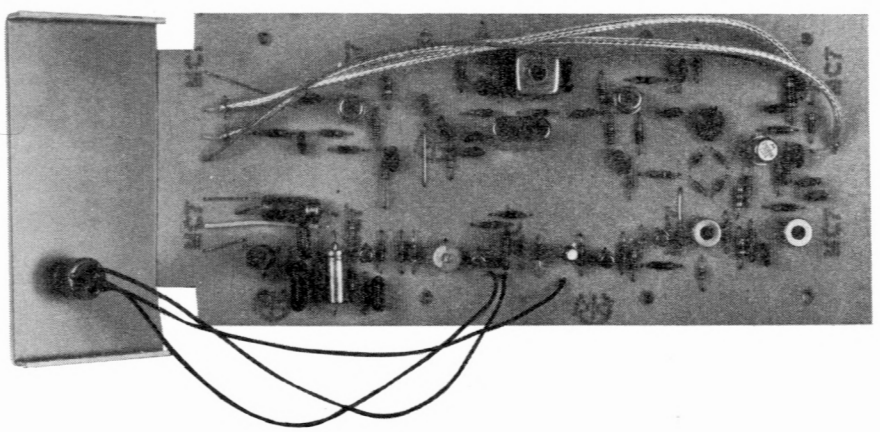


Figure 5-4. Video Modulator (A2)

P04-1

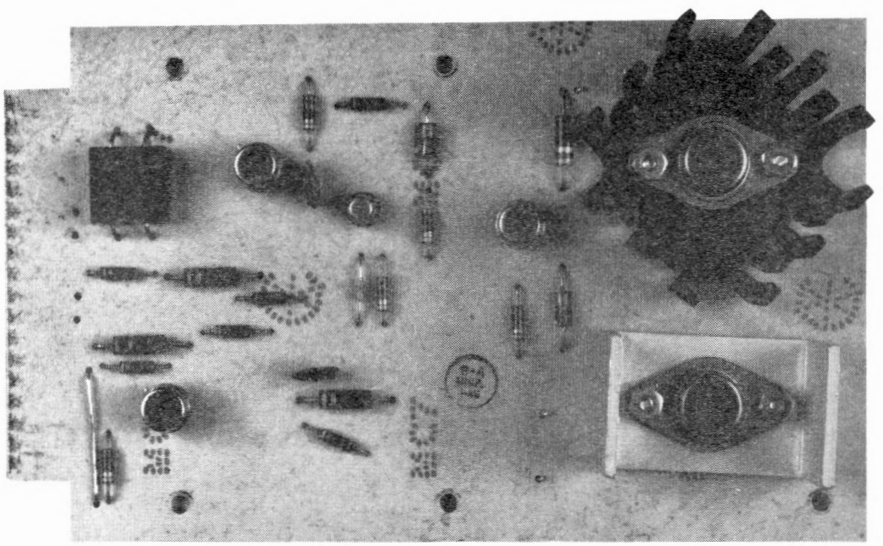


Figure 5-5. Power Supply (A3)

P05-8

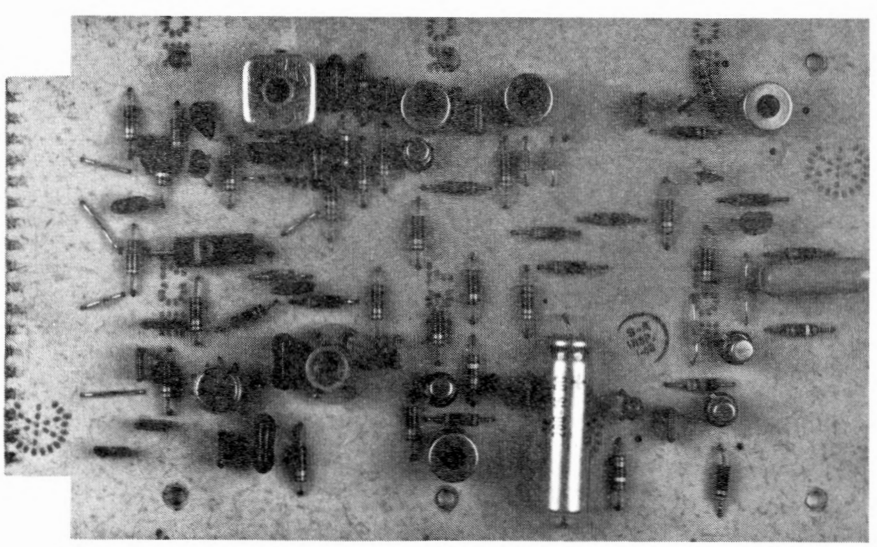


Figure 5-6. Meter Circuit (A4)

P05-7

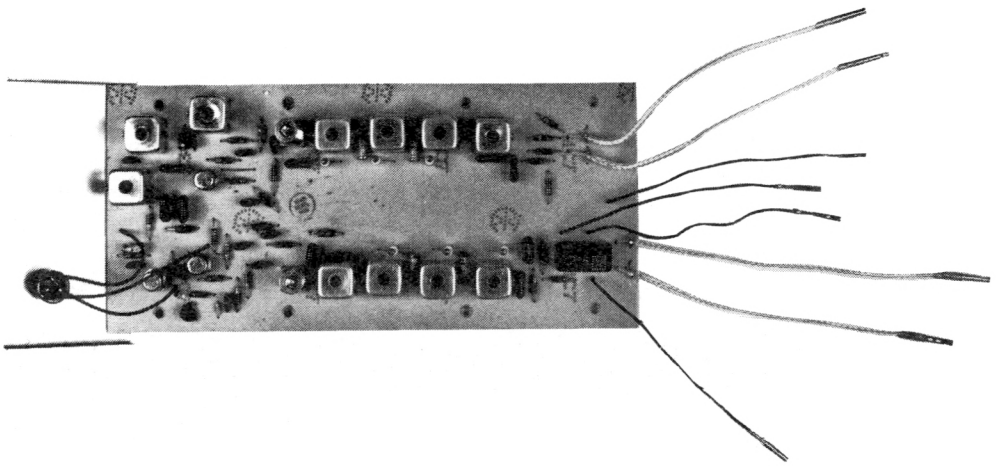


Figure 5-7. Vestigial Sideband Filter (A5)

P04-4

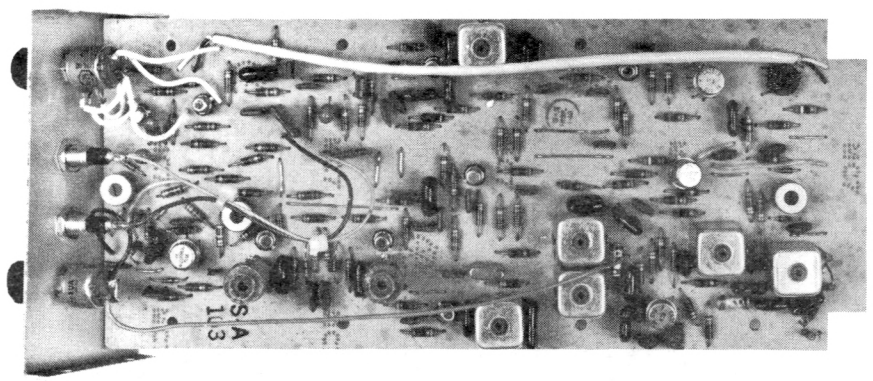


Figure 5-8. Audio Modulator (A6)

P04-5

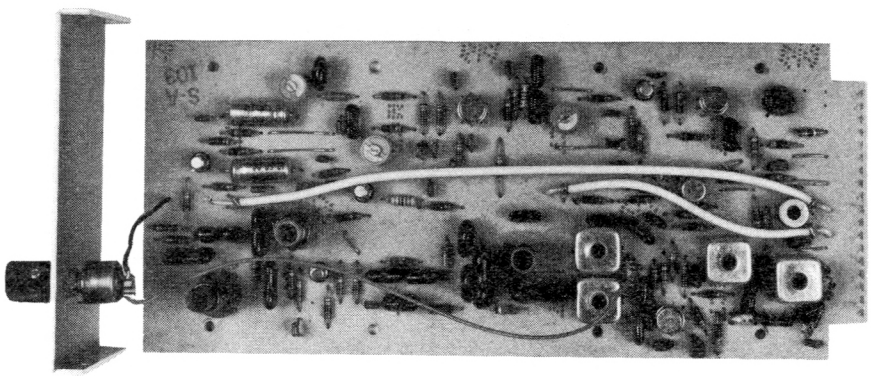


Figure 5-9. 4.5 MHz Converter (A6.1)

P04-3

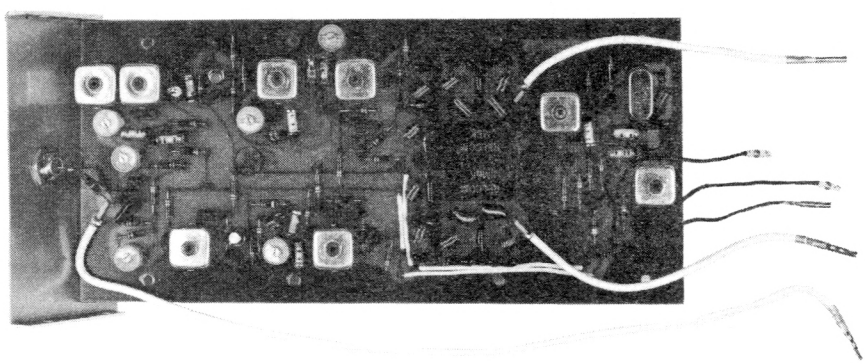


Figure 5-10. Output Converter (A7), Low-Band

P04-6

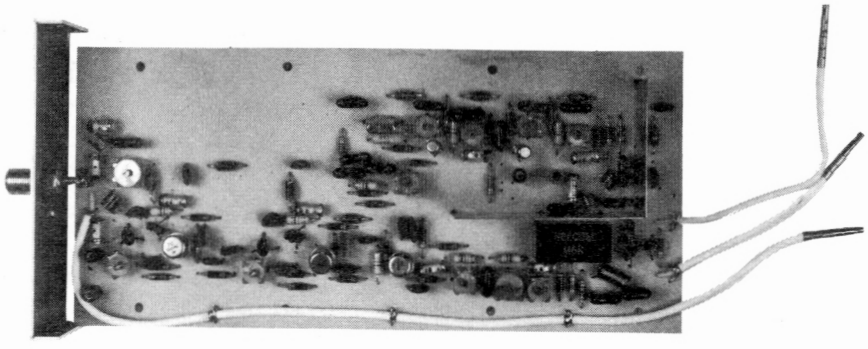


Figure 5-11. Output Converter (A7), Mid-Band

P04-2

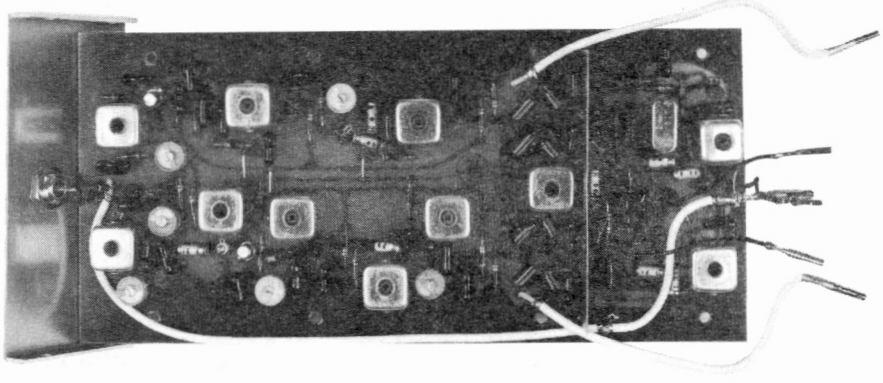


Figure 5-12. Output Converter (A7), High-Band

P03-9

5.2.1 BURNDY CONNECTOR ASSEMBLY

Burndy connectors are used to interface the output converter (A7) and vestigial sideband filter (A5) modules to the main chassis. These connectors require special tools and care for both assembly and disassembly. The following is a breakdown of the location of the various connector and pin configurations along with the nomenclature and Burndy part number of the special tools necessary for assembly and disassembly:

Connector Model No.	Used In
MS20RM-61	Main chassis
MS20PM-61	A5 and A7 modules
Pins (Power)	
RM20M-13 (Male)	Main chassis
RC24M-9 (Female)	A5 and A7 modules
Pins (Coaxial)	
RMDXK-1	Main chassis
RCDXK-1	A5 and A7 modules
Tools	Burndy Pt. No.
Crimp Tool	M10S-1
Die Set	S-23
Stop Bushing	RCDX60-2
Extraction Tool	RX20-25

When cable to connector assembly (figure 5-13) is complete the connector is pushed into its appropriate mounting hole in the connector body. When inserted to the correct depth the retaining louver will snap into position holding the connector firmly in place. Connector removal requires the use of the extraction tool. The extraction tool is inserted (over the connector) into the connector body. Pressure is applied against the tool until the connector is pushed out the rear of the connector body.

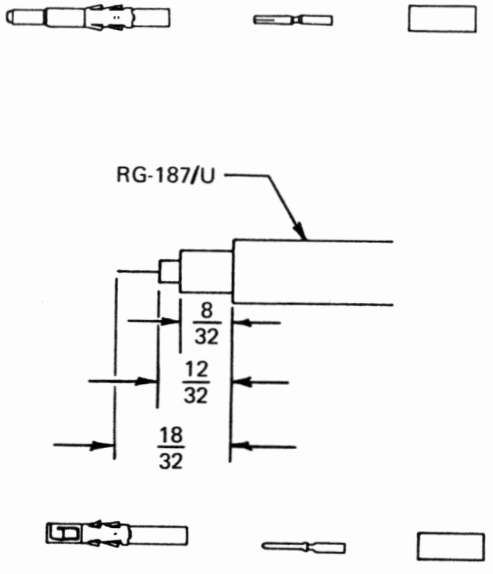


Figure 5-13. Burndy Connector Assembly

5.3 BENCH TESTS, ADJUSTMENTS AND CALIBRATION

The test procedures presented in paragraphs 5.4 through 5.11 provide necessary information pertaining to complete tests, adjustment and calibration of the modulators. Proper operation of each unit has been verified by these procedures before shipment. Therefore, unless special or unusual conditions warrant, further checkout or calibration should not be required. These procedures are given as an aid in isolating trouble connected with equipment malfunction or to verify proper circuit operation after repairs have been effected. It is recommended that the procedures be performed only by qualified tecnicians.

Table 5-1 is a list of test equipment required for complete checkout and calibration of the modulators. For test equipment pertaining to individual modules, refer to the individual test procedure for that particular module.

TABLE 5-1. TEST EQUIPMENT REQUIRED

Description	Mfr. / Model No.
Volt Ohmmeter	Triple 630
Oscilloscope	Tektronix 453
Oscilloscope	Hewlett-Packard 1202A
Sweep Generator	Texscan VS-40
Frequency Counter	Systron Donner 7015
Broadband Sampling Voltmeter	Hewlett-Packard 3406A
RF Generator	Hewlett-Packard 608C
Test Oscillator	Hewlett-Packard 651A
Spectrum Analyzer	Hewlett-Packard 140T RF Section 8554L IF Section 8552A
Test Signal Generator	Tektronix 146 NTSC
Field Strength Meter	Jerrold 727
Marker Generator	RCA WR-99A
Marker Generator	Heathkit IG-14
Step Attenuator	Texscan SA-78
Rho-Tector	Texscan RCB-3/75
Multiburst Generator	Telemation TMT-103
50-75 ohm minimum Loss Pad	Texscan ZM-57
75-ohm Termination	Texscan TF-75N
50-ohm Termination	Texscan TF-75N
75-ohm Termination	Texscan TF-75 BNC
Adapter (BNC to Banana)	Pomona 1269
Adapter (BNC "TEE")	Amphenol MS3517-173-274B
Adapter (BNC Plug to UHF Jack)	Pomona UG-273/U
Extender Cards (2)	Scientific-Atlanta 113276
Jumper Cable (18"), figure 5-14	Scientific-Atlanta 115689
Jumper Cable (6"), figures 5-14 and 5-19	Scientific-Atlanta
Video Detector (figures 5-14 and 5-15)	Scientific-Atlanta
Long Time Constant Video Detector (figures 5-14 and 5-16)	Scientific-Atlanta
Sweep Adapter (figures 5-14 and 5-17)	Scientific-Atlanta

TABLE 5-1. TEST EQUIPMENT REQUIRED-continued

Description	Mfr. / Model No.
Special BNC Adapter (figure 5-14)	Scientific-Atlanta
BNC Connector (figures 5-14 and 5-18)	Any UG-625/u
X1 Scope Probe	Tektronix 010-0075-00
X10 Scope Probe	Tektronix 013-0090-00
Dummy Load (figures 5-14 and 5-20)	--

5.4 POWER SUPPLY (A3), AND METER CIRCUIT (A4)

5.4.1 PRELIMINARY

Perform the following

a. Before applying line voltage to the chassis:
   1. Remove all plug-in modules.
   2. Remove all rear panel terminations and cables.
   3. Install extender cards in chassis connectors XA3 (power supply) and XA4 (meter circuit).

CAUTION

The power supply extender card carries ac line voltage to the POWER ON switch. Do not remove or install this extender card with line voltage applied to the modulator chassis.

b. Visually inspect the meter circuit (A4) and power supply (A3) PC boards for solder bridges and other obvious mistakes. Check insertion of transistors for correct lead location. Mechanically zero the front panel meter.

CAUTION

Without the large side cover the power supply and meter circuit module can be plugged into the chassis upside down. Do not do so as this applies AC line voltage directly to the meter circuit PC board. Also exercise caution when using extender cards as this situation may result with or without side covers.

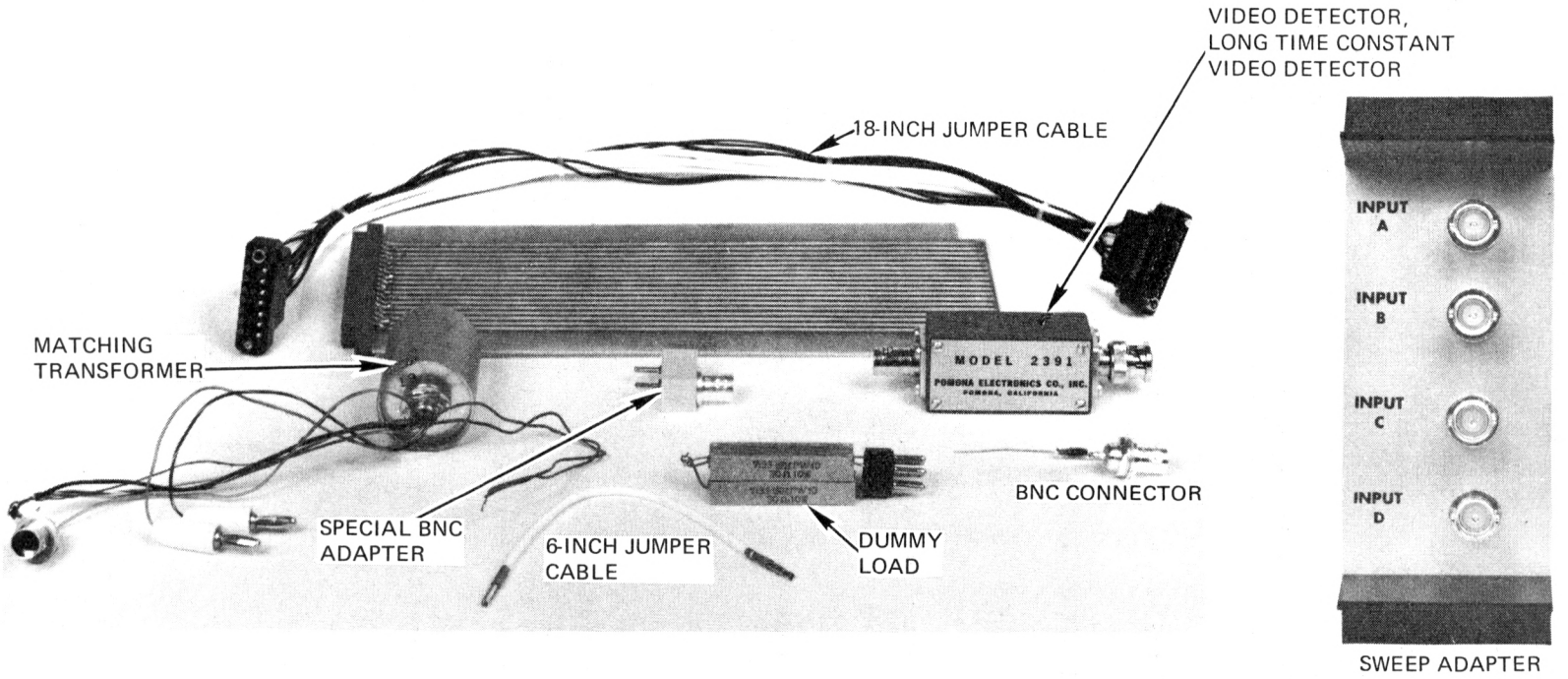


Figure 5-14. Test Adapters

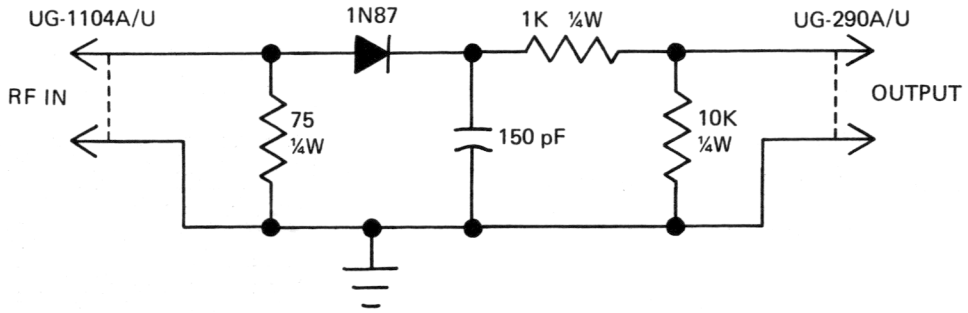


Figure 5-15. 75-Ohm Video Detector Schematic

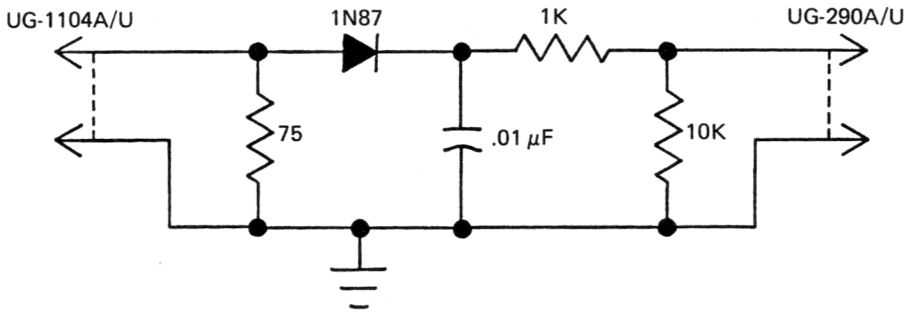
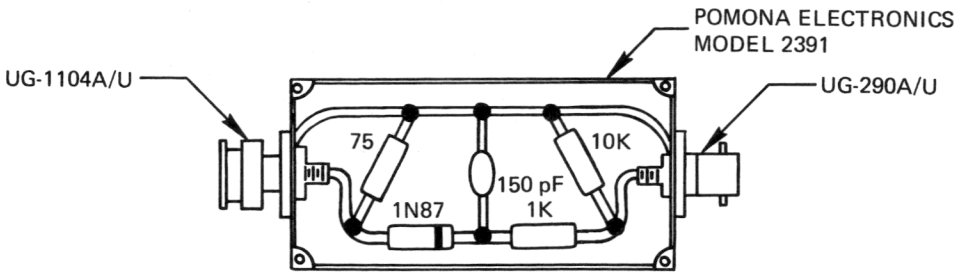


Figure 5-16. Long Time Constant Detector Schematic



b. Construction

Figure 5-16a. Video Detector Mechanical Assembly

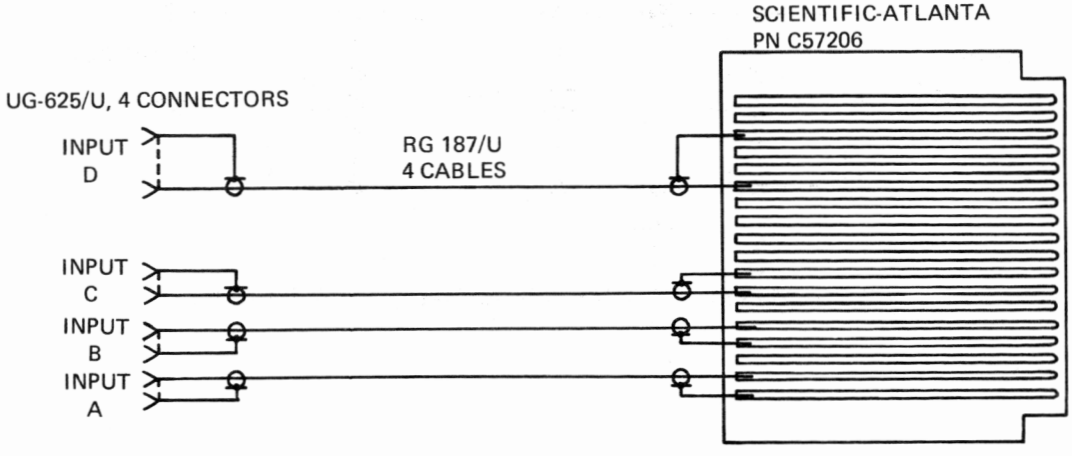


Figure 5-17. Sweep Adapter Construction

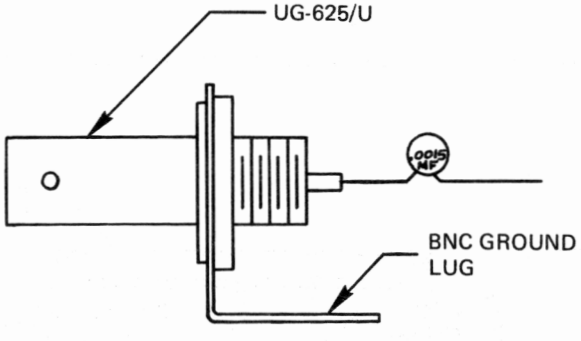


Figure 5-18. BNC Connector

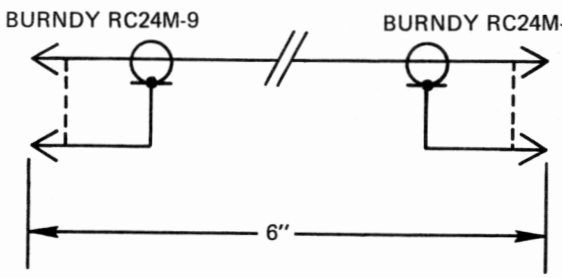


Figure 5-19. 6-inch Jumper Cable

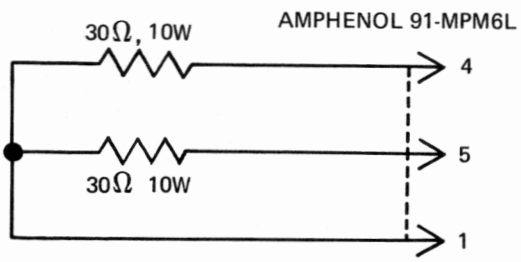


Figure 5-20. Dummy Load

c. Plug the power supply and meter circuit module into the extender cards, apply line voltage to the modulator chassis, place the meter function switch to the OFF position, and switch the POWER ON switch to the POWER ON position.

5.4.2 PERFORMANCE TESTS

5.4.2.1 Power Supply (A3)

a. Check the power supply output voltages at the provided test points (XA8) on the rear panel of the modulator.

B+	+15V, ±1V
B-	-15V, ±1V

b. Plug the dummy load (figure 5-14) into the test point connector (XA8) and again check the power supply voltages. The voltage change under load should be less than 0.3V.

c. Check the power supply ripple under load.
(±15V ripple should be less than 5 mV)

d. Remove the dummy load. Avoid skin contact with the load resistors as they may be extremely hot. This completes the power supply performance tests.

CAUTION

If power supply regulation fails (voltage increases beyond tolerance) do not operate the modulator with plug-in modules installed. Remove all other modules before troubleshooting the power supply.

5.4.2.2 Meter Circuit (A4)

a. Adjust the meter zero potentiometer A4R39 until the meter pointer comes to zero. This should occur at approximately the center of potentiometer rotation. The front panel meter function switch should be in the OFF position.

b. Switch the front panel meter function switch to the VIDEO MODULATION position. Adjust potentiometer A4R26 for a meter reading of zero. Return the function switch to the OFF position.

c. Plug the sweep adapter (figure 5-14) into the video modulator chassis connector XA2.

d. Feed a 45.75 MHz sweep signal into the INPUT B connector of the sweep adapter (figure 5-21).

e. Connect a X1 Scope Probe to the sweep setup, then to the base of A4Q3, 2N3947 (do not use an external video detector). A convenient place to clip the probe is at the end of A4R21, a 3.9 kilohm resistor.

f. With a scope sensitivity of 0.1V/cm, tune A4L2 until the response is centered around 45.75 MHz. (See figure 5-22.)

g. Remove the probe from A4R21 and clip it to the A4Q2 base end of A4R13; a 82-ohm resistor.

h. Remove the sweep generator output cable from the sweep adapter. Remove the sweep adapter from the video modulator chassis connector (XA2). Plug the sweep adapter into the audio modulator chassis connector XA6. Feed a 4.5 MHz sweep signal, narrow sweep, into the INPUT D connector of the sweep adapter. Set A4R17 maximum CW.

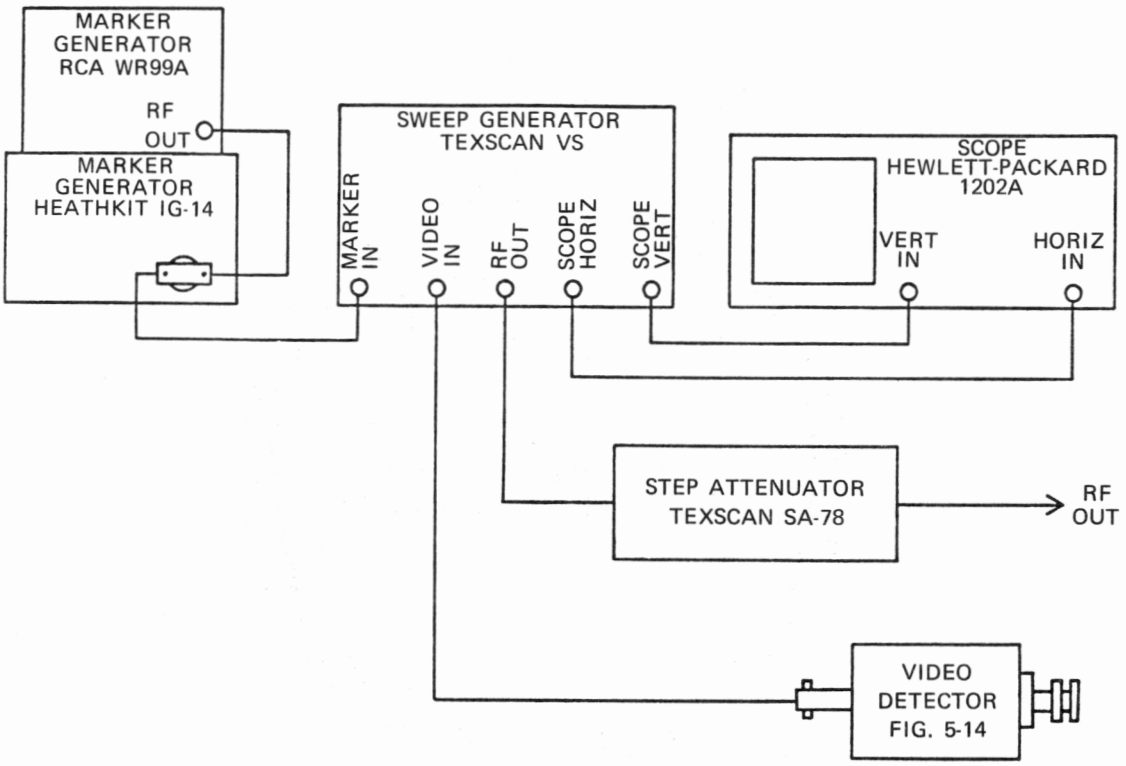


Figure 5-21. Sweep Setup

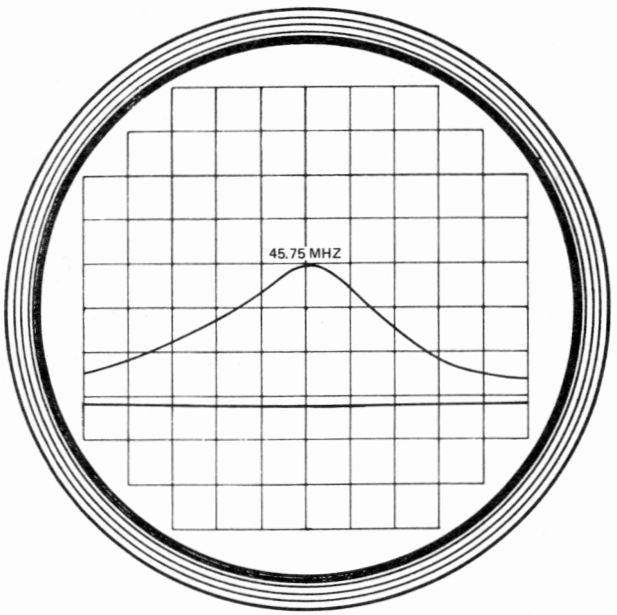


Figure 5-22. Meter Circuit Video Response

i. With a scope sensitivity of 0.1V/cm, tune A4L1 (A and B) for a response as shown in figure 5-23. The top slug A4L1A places the crossover point and the bottom slug A4L1B controls symmetry or evenness of the peaks.

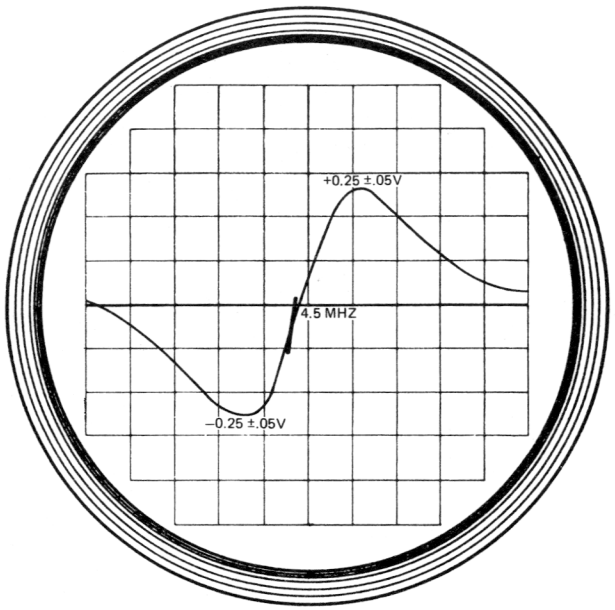


Figure 5-23. Meter Circuit Discriminator Response

j. Remove the scope probe, switch the POWER ON switch to the OFF position, remove AC line voltage from the modulator chassis, remove the power supply and meter circuit module from the extender cards, and remove the extender cards and the sweep adapter from the modulator chassis.

k. Place the small cover on the power supply (A3) side of the power supply and meter circuit module and plug the module into the modulator chassis. This completes preliminary alignment of the power supply and meter circuit module.

5.5 VESTIGIAL SIDEBAND FILTER (A5)

5.5.1 PRELIMINARY

a. Turn the POWER ON switch to the OFF position and perform the following:

1. Remove all plug-in modules except the power supply and meter circuit module.
2. Remove all rear panel terminations and cables.
3. Plug the sweep adapter (figure 5-14) into the video modulator chassis connector XA2.
4. Using the 6-inch jumper cable (figure 5-14), jumper pins "C" and "N" of the output converter chassis connector XA7 (top and center coaxial pins).
5. Plug the 18-inch jumper cable (figure 5-14) into the vestigial sideband filter chassis connector XA5.

b. Visually inspect the vestigial sideband filter PC board (A5) for solder bridges and other obvious mistakes. Check all 6 pF interstage capacitors to insure that the ungrounded side of each capacitor is not shorted to the coil shield can.

5.5.2 VESTIGIAL SIDEBAND FILTER (A5) ALIGNMENT

The vestigial sideband filter consists of three main sections which are:

1. Input Filter Section
2. Interstage Amplifier Section
3. Output Filter Section.

Alignment begins with the interstage amplifier and progresses to include the input filter section. Next, the input filter section is disabled and the output filter section is aligned in conjunction with the interstage amplifier. Finally, the three sections are coupled together and overall alignment is completed.

5.5.3 INTERSTAGE AMPLIFIER

a. Remove A5C9 (10 pF), A5C10 (20 pF), and A5C24 (10 pF).

b. Remove the tuning slug from A5L11.

c. Preset tuning slugs and trimmer capacitors as shown in figure 5-24.

d. Set the VIDEO CARRIER LEVEL control A5R11 on the front panel of the vestigial sideband filter to approximately 3/4 of its maximum cw rotation.

e. Plug the loose end of the 18-inch jumper cable (figure 5-14) into the vestigial sideband filter connector.

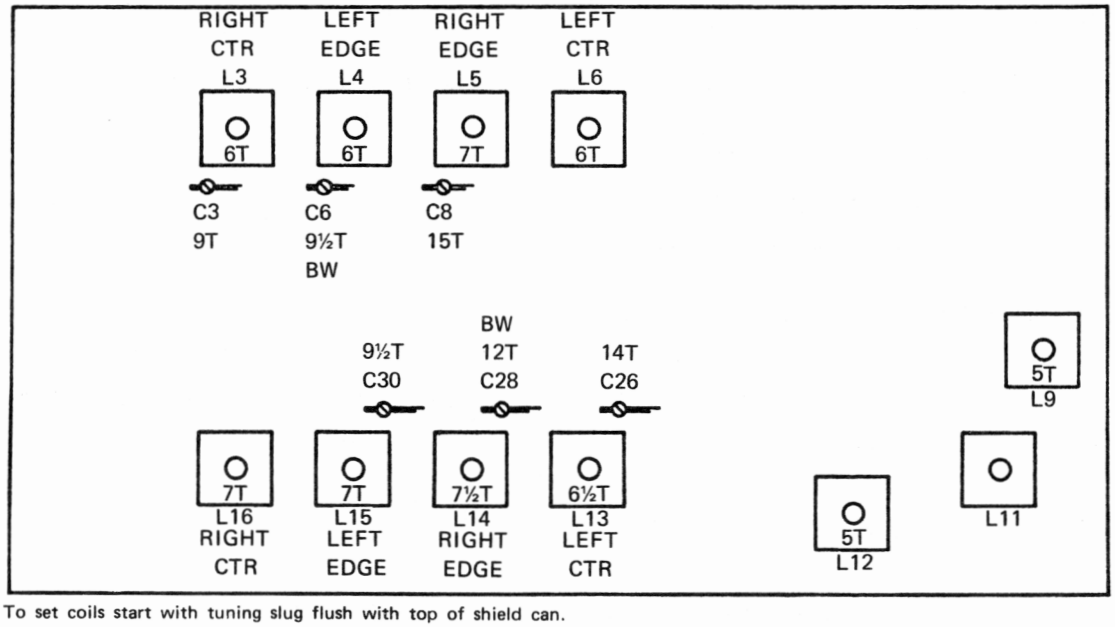
f. Connect the sweep generator RF out cable (figure 5-21) to the test point connector A5J2 on the vestigial sideband filter PC board.

g. Connect a video detector (figure 5-14) to the sweep setup, then to the test point connector A5J3 on the vestigial sideband filter PC board.

h. Set the scope vertical sensitivity to 5 mV/cm and the sweep generator controls for a 5 cm horizontal display between 41.50 MHz and 46.50 MHz.

i. Switch the POWER ON switch to the POWER ON position and adjust the sweep generator RF out level for a vertical scope display of approximately 5 divisions.

j. Tune coils A5L9 and A5L12 for a flat response (±1/4 dB) between 41.50 MHz and 46.50 MHz. The response should resemble figure 5-25.



To set coils start with tuning slug flush with top of shield can.

To set capacitors start with tuning screw at maximum depth into capacitor body.

Figure 5-24. Initial Position of Vestigial Sideband Filter Tuning Elements

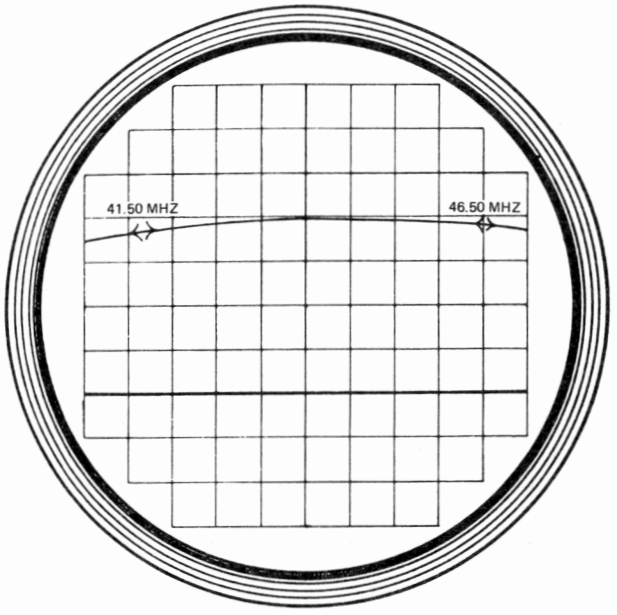


Figure 5-25. Vestigial Sideband Filter Interstage Amplifier Response

k. Switch the POWER ON switch to the OFF position. Disconnect the sweep generator RF out cable and the video detector from the vestigial sideband filter module.

5.5.4 INPUT FILTER AND INTERSTAGE AMPLIFIER

a. With the POWER ON switch in the OFF position install A5C9 (10 pF) and A5C10 (20 pF).

b. Connect the output of the sweep generator to the INPUT C connector of the sweep adapter.

c. Connect the video detector to the test point connector A5J3 on the vestigial sideband filter PC board.

d. Switch the POWER ON switch to the POWER ON position.

Note

The tuning elements of the input filter section represent an equal element quadruple tuned circuit. The quad response of the filter should be displayed as four distinct humps (see figure 5-26). The bandwidth between the two outer humps is determined by A5C6 and the frequency of these humps by A5L4 and A5L5. The amplitude of the inside right hump is determined by A5C3. The amplitude of the inside left hump is determined by A5C8 and its frequency by A5L6. Although coupling capacitors A5C3, A5C6 and A5C8 predominately determine the overall bandwidth and amplitude of the inside humps, they also affect to a lesser degree, the frequency. Therefore, each time adjustments to A5C3, A5C6, and A5C8 are made it is necessary to slightly readjust the appropriate coil or coils. Once set, the relative position of the coil response must be maintained. This is imperative for successful alignment of the filter. Therefore, as the response approaches optimum make only slight adjustments of the coils always maintaining their relative positions.

e. Tune A5L3, A5L4, A5L5 and A5L6 until their relative positions correspond to those shown in figure 5-26. Adjustments from the preset positions of figure 5-24 typically vary less than ±2 turns.

f. Having established the relative positions of the coils, make slight adjustments to A5L3, A5L4, A5L5, A5L6, A5C3, A5C6 and A5C8 until the response resembles that of figure 5-26.

The gain of the input filter section and interstage amplifier should be 6 dB ±3 dB with the VIDEO CARRIER LEVEL potentiometer maximum cw. Return the video carrier level potentiometer 3/4 cw.

g. Switch the POWER ON switch to the OFF position. Disconnect the sweep generator RF OUT cable and the video detector from the vestigial sideband filter module.

5.5.5 OUTPUT FILTER AND INTERSTAGE AMPLIFIER

a. With the POWER ON switch in the OFF position, solder a .0015 μF capacitor (short leads) from the junction of A5L6, A5C9 and A5C8 to ground. Install A5C24 (10 pF), one of the capacitors removed in paragraph 5.5.3, step a.

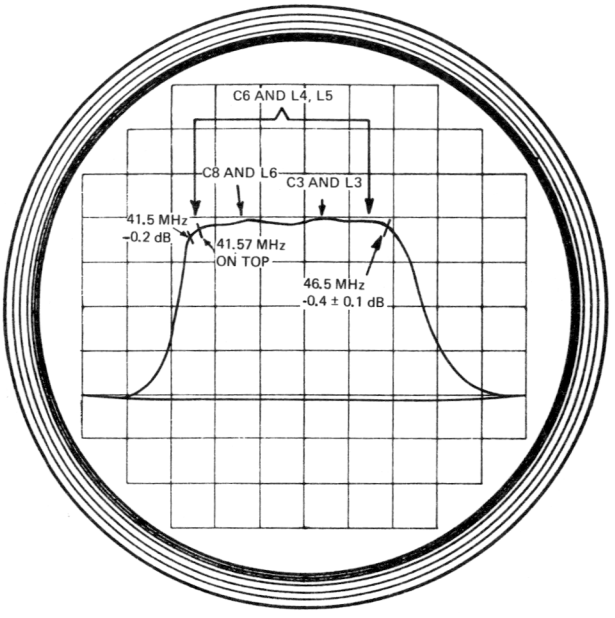


Figure 5-26. Vestigial Sideband Filter Input Filter and Interstage Amplifier Response

b. Connect the sweep generator RF out cable to the test point connector A5J2 on the vestigial sideband filter PC board.

c. Connect the video detector to the RF OUT connector (J9) on the rear panel of the modulator.

d. Switch the POWER ON switch to the POWER ON position.

Note

Output filter tuning is identical to that of the input filter. The bandwidth of the two outer humps is determined by A5C28 and their frequency by A5L14 and A5L15. The amplitude and frequency of the inside left hump is determined by A5C26 and A5L13, respectively. The amplitude and frequency of the inside right hump is determined by A5C30 and A5L16, respectively.

e. Tune A5L13, A5L14, A5L15 and A5L16 until their relative positions correspond to those shown in figure 5-27. Adjustments from the preset positions in figure 5-24 typically vary less than ±2 turns.

f. Having established the relative positions of the coils, make slight adjustments to A5L13, A5L14, A5L15, A5L16, A5C26, A5C28 and A5C30 until the response resembles that of figure 5-27.

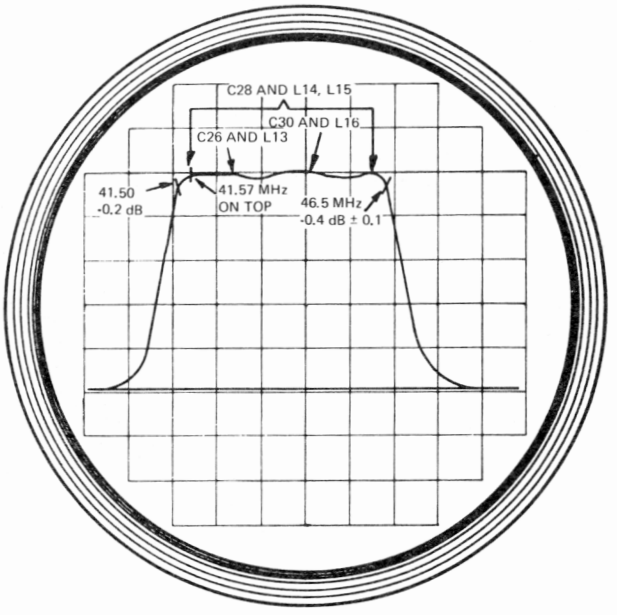


Figure 5-27. Vestigial Sideband Filter Output Filter and Interstage Amplifier Response

The gain of the output filter section and interstage amplifier should be 7 dB ±3 dB with the VIDEO CARRIER LEVEL potentiometer maximum cw. Return the VIDEO CARRIER LEVEL potentiometer 3/4 cw.

g. Switch the POWER ON switch to the OFF position. Disconnect the sweep generator RF out cable from the vestigial sideband filter module. Remove the .0015 μF capacitor temporarily installed in paragraph 5.5.3, step a.

5.5.6 OVERALL FILTER

a. Connect the sweep generator RF out cable to the INPUT C connector of the sweep adapter. The video detector should still be connected to the RF OUT connector (J9) on the modulator rear panel.

b. Insure that the VIDEO CARRIER LEVEL control A5R11 is set at approximately 3/4 of its maximum cw rotation.

c. Swith the POWER ON switch to the POWER ON position.

d. Replace the slug in A5L11 and tune the notch to a frequency of 47.25 MHz.

e. Slightly adjust, if necessary, the input and output filter sections for the response shown in figure 5-28. Note that the overall bandwidth, center frequency, amplitude of the inside humps, and frequency of the inside humps are determined by the same tuning elements that controlled them in the input filter and output filter alignment procedures.

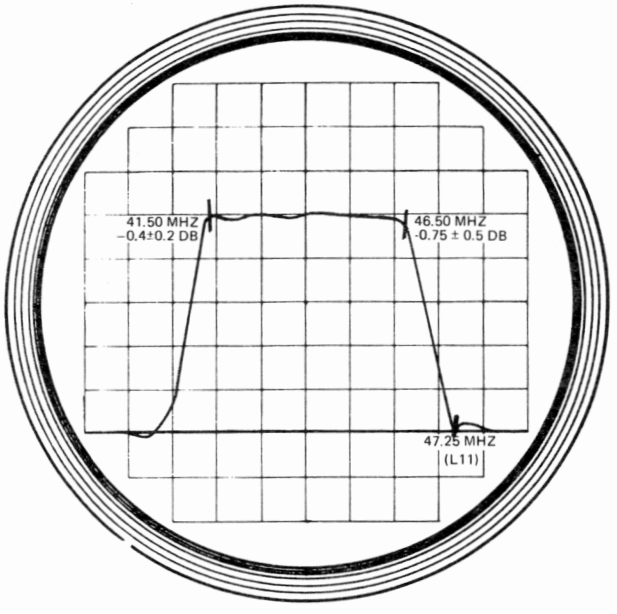


Figure 5-28. Vestigial Sideband Filter Overall Response

The gain of the overall filter should be 0 dB ±3 dB with the VIDEO CARRIER LEVEL control maximum cw.

f. Install the bottom cover (small cover) on the vestigial sideband filter module. If the response tilts repeat paragraph 5.5.4, step e.

g. Switch the POWER ON switch to the OFF position. Disconnect the sweep generator RF out cable from the sweep adapter.

5.5.7 RELAY OPERATION

a. Install a shorting jumper between the pins labeled "RELAY COIL" and "COMM" of the test point connector XA8 on the rear panel of the modulator.

b. Connect the sweep generator RF out cable to the VIDEO IF IN connector (J4) on the modulator rear panel. The video detector should still be connected to the RF OUT connector (J9).

c. Switch the POWER ON switch to the POWER ON position. The gain of the response should be 0 dB ±3 dB.

d. Switch the POWER ON switch to the OFF position. Remove the shorting jumper from the test point connector XA8. Disconnect the vestigial sideband filter from the 18-inch jumper cable and remove the 18-inch jumper cable from the modulator. Install the top cover on the vestigial sideband filter module and plug the module into the modulator chassis. Move the sweep generator RF out cable from the VIDEO IF IN connector (J4) to the INPUT C connector of the sweep adapter. Switch the POWER ON switch to the POWER ON position and observe the response of the vestigial sideband filter. The response should resemble that shown in figure 5-28. Disconnect all test equipment. This completes alignment of the vestigial sideband filter.

5.6 OUTPUT CONVERTER (A7)

5.6.1 GENERAL

The alignment begins with a general set-up procedure which is common to each model of the output converter. This general procedure consists of paragraphs 5.6.2 and 5.6.3. These steps should be performed before proceeding to the specialized procedure outlined for each model of the output converter. The specialized procedures are included in paragraphs 5.6.4, 5.6.5 and 5.6.6 for the particular band of frequencies characteristic to each model of the output converter. The designations are broken down as follows:

Paragraph	Frequency Band	Channel
5.6.4	Low-band	2 through 6
5.6.5	Mid-band	A through I
5.6.6	High-band	7 through 13

Thus, output converter alignment should be performed according to the following format:

Step 1, paragraph 5.6.2

Step 2, paragraph 5.6.3
Step 3, paragraph 5.6.4, or 5.6.5 or 5.6.6

5.6.2 PRELIMINARY

a. Perform the following with the POWER ON switch in the OFF position:
   1. Remove all plug-in modules except the power supply and meter circuit module.
   2. Using a 6-inch jumper cable (figure 5-14) jumper pins "K" and "S" of the vestigial sideband filter chassis connector XA5 (center coaxial pins).
   3. Plug the 18-inch jumper cable (figure 5-14) into the output converter chassis connector XA7.
   4. Plug the sweep adapter (figure 5-14) into the audio modulator chassis connector XA6.
   5. Remove all rear panel terminations and cables.

b. Visually inspect the output converter PC board (A7) for solder bridges and other obvious mistakes. Check the insertion of transistors for correct lead location.

5.6.3 OUTPUT CONVERTER (A7) ALIGNMENT

The output converter consists of three main sections:

a. Video Channel

b. Sound Channel

c. Local Oscillator

Alignment begins at the output network of the converter and progresses back through the video channel to the video channel input. Next, the sound channel is aligned and finally the local oscillator is started and tuned.

5.6.4 LOW-BAND OUTPUT CONVERTER ALIGNMENT

5.6.4.1 Video Channel Alignment

a. Remove the tuning slugs from A7L1 (oscillator) and A769 (buffer). Solder a 100-ohm resistor (short leads) across A7L9.

b. Disconnect A7C34 at the junction of A7L20 and A7R36.

c. Disconnect A7R33 at the junction of A7R34 and A7L25. Solder a 75-ohm resistor (short leads) from this junction to ground.

d. Connect a BNC connector (figure 5-14) to the base of A7Q6 (2N4072) through a .0015 μF capacitor.

e. Set A7C37 and A7C32 for minimum capacitance.

f. Set A7C45 and A7C47 to the center of their range.

g. Set A7L16 to the bottom of the coil form.

h. Connect the sweep generator RF out cable to the BNC connector (figure 5-21).

i. Connect the video detector (figure 5-14) to the RF OUT connector (J9) on the rear panel of the modulator.

j. Plug the loose end of the 18 inch jumper cable into the output converter connector.

k. Switch the POWER ON switch to the POWER ON position.

l. With a scope sensitivity of 1 mV/cm set the sweep generator center frequency for a scope display at the channel frequency of the output converter being tuned.

m. Tune A7L23 and A7L24 until the displayed response is centered around the center of the channel being tuned.

n. Disconnect the video detector and sweep generator. Connect the RF OUTPUT of a HP-608 Signal Generator to the RF OUT connector (J9) on the rear panel of the modulator. Connect a HP-3406A RF Voltmeter to the BNC connector temporarily installed in step d. Adjust the HP-608 for the center frequency of the channel being tuned (half way between sound and picture frequencies) and set the RF OUTPUT level for approximately 500 mV. Adjust the output converter neutralizing capacitor A7C39 for minimum voltage as read on the RF voltmeter. A distinct voltage null should be observed. Decrease the HP-608 output level; the RF voltmeter reading should decrease also.

o. Disconnect the HP-608 and the RF voltmeter. Switch the POWER ON switch to the OFF position and remove the temporary BNC connector. Solder the loose end of A7C34 to the A7L20, A7R36 junction.

p. Calibrate the sweep setup for VSWR measurement (figure 5-29).

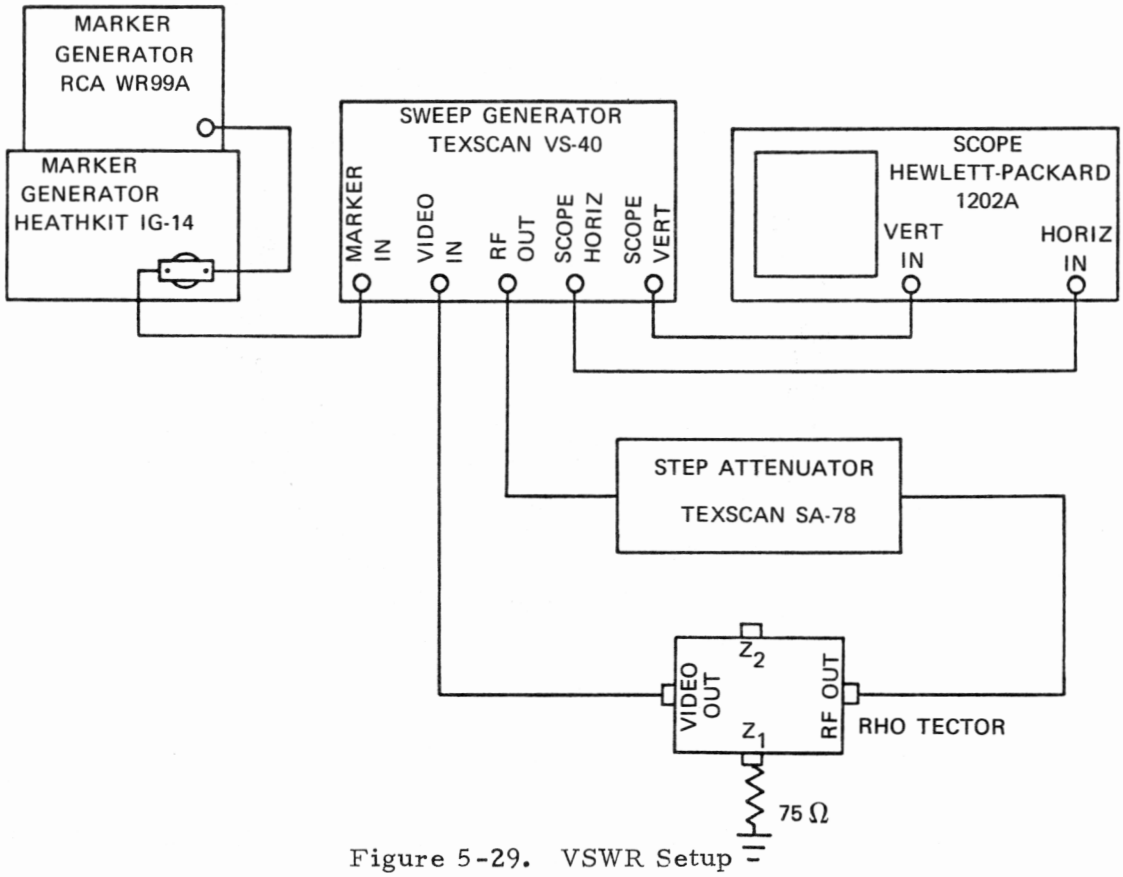


Figure 5-29. VSWR Setup

1. Terminate the "Z_2" port of the Rho-Tector with a 50-ohm load.
2. Set the scope vertical sensitivity to 1 mV/cm.
3. Adjust the sweep generator RF output for 1 cm of vertical deflection and the sweep width control for a 2 cm horizontal display between video and sound carrier frequencies of the channel being tuned. This display represents a VSWR of 1.5:1.

q. Remove the 50-ohm load and connect this port of the Rho-Tector to the RF OUT connector (J9) on the rear panel of the modulator.

r. Switch the POWER ON switch to the POWER ON position and tune A7L24, A7L23, A7C47 and A7C45 for the best VSWR response (figure 5-30). The VSWR should be less than 1.35:1.

s. Switch the POWER ON switch to the OFF position. Remove the 75-ohm resistor installed in step c. Replace the lifted end of A7R33. Switch the POWER ON switch to the POWER ON position and, if necessary, adjust A7C42 and A7L22 to regain the VSWR response of step r. Disconnect the Rho-Tector from the modulator and from the sweep setup.

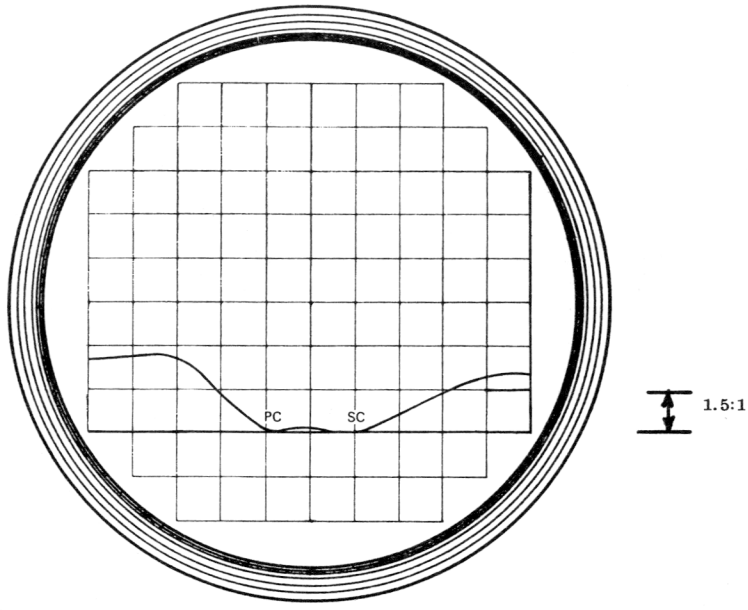


Figure 5-30. Low-Band Output Converter VSWR Response

t. Switch the POWER ON switch to the OFF position. Connect the BNC connector (figure 5-14) to the base of A7Q4 (video mixer) through a .0015 μF capacitor. Disconnect A7L15 at the base of A7Q4 and connect the sweep generator RF output to the BNC connector. Connect the video detector to the sweep setup then to the RF OUT connector (J9) on the rear panel of the modulator. Switch the POWER ON switch to the POWER ON position and adjust the sweep generator RF output for a scope display of 4 divisions (the center frequency should already be at channel from previous steps).

u. Tune A7L17, A7C31, and A7L19 for a response as shown in figure 5-31.

v. Switch the POWER ON switch to the OFF position. Remove the temporary BNC connector from the base of A7Q4 and reconnect A7L15 to the base of A7Q4. Preliminary alignment of the video channel is now complete.

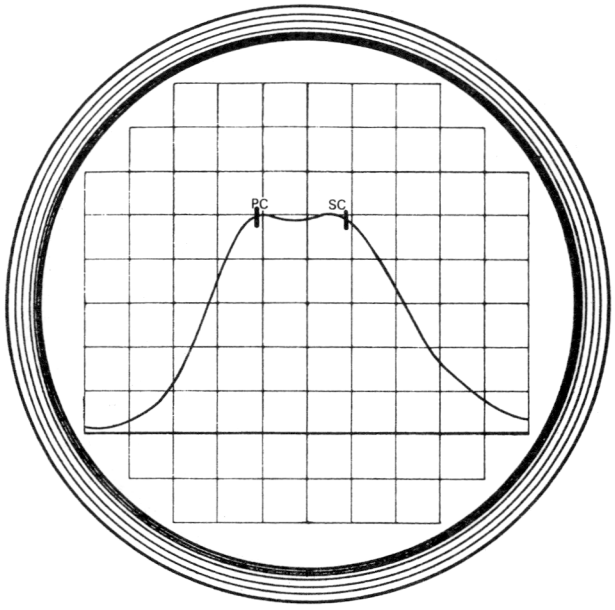


Figure 5-31. Low-Band Output Converter Video Channel Response

5.6.4.2 Sound Channel Alignment

a. With the POWER ON switch in the OFF position, disconnect A7L14 at the junction of A7C19 and A7R10. Connect the BNC connector to the base of A7Q3 (sound mixer) through a .0015 μF capacitor. Connect the sweep generator RF output cable to the BNC connector. Leave the video detector connected to the RF OUT connector (J9) on the rear panel of the modulator.

b. Switch the POWER ON switch to the POWER ON position and tune A7L16 for a response as shown in figure 5-32.

c. Switch the POWER ON switch to the OFF position. Remove the BNC connector and reconnect A7L14 at the base of A7Q3. Preliminary alignment of the sound channel is now complete.

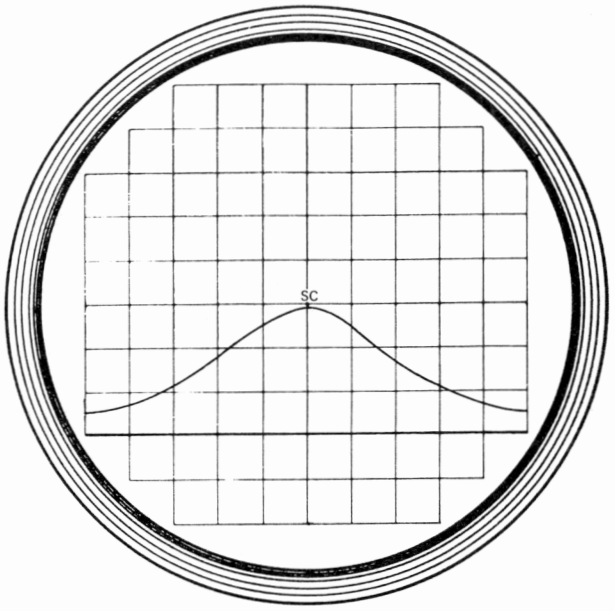


Figure 5-32. Low-Band Output Converter Sound Channel Response

5.6.4.3 Local Oscillator Alignment

a. With the POWER ON switch in the OFF position, remove the 100-ohm resistor temporarily installed across A7L9 in paragraph 5.6.4.1, step a.

b. Replace the tuning slugs in the A7L1 and A7L9 and position these slugs in the center of the coil forms.

c. Connect the sweep generator RF out cable to the VIDEO IF IN connector (J4) on the rear panel of the modulator. The video detector should still be connected to the RF OUT connector (J9) on the rear panel of the modulator.

d. Adjust the sweep generator controls for an IF response display on the scope (i.e., the center frequency control should be set for approximately 43 MHz and the sweep width control should be set for a 2 cm display between 41.25 MHz and 46.50 MHz).

e. Switch the POWER ON switch to the POWER ON position. Tune A7L1 for maximum response then a dip in the response. The dip is not well defined but occurs just before the response rapidly falls off.

f. Tune A7L9 until a slight dip in the response is observed. When A7L9 is tuned to either side of this dip the response should peak slightly.

g. Remove the sweep generator RF output cable from the VIDEO IF IN connector (J4) on the rear panel of the modulator. With the HP-3406A RF Voltmeter measure the oscillator injection voltage at the junction of A7L9 and A7C52. Peak A7L1 and A7L9 while monitoring the RF voltmeter. The injection voltage at this point should be greater than 400 mV.

h. Connect a frequency counter to the junction of A7L9 and A7C52. The frequency should be the crystal frequency ±2.5 kHz. Switch the power on and off several times; the frequency should not change.

i. Remove the frequency counter and connect the sweep generator RF out cable to the VIDEO IF IN connector (J4) on the rear panel of the modulator. Remove the video detector from the RF OUT connector (J9) on the rear panel of the modulator. Connect a Jerrold 727 Field Strength Meter to the RF OUT connector (J9). Tune the field strength meter to the crystal frequency of the channel being tuned. Alternately adjust A7C32 and A7C37 for a minimum reading on the field strength meter. Disconnect the field strength meter from the modulator.

j. Connect the video detector to the RF OUT connector (J9) on the rear panel of the modulator. Tune A7L17, A7L19 and A7C31 for the response shown in figure 5-33.

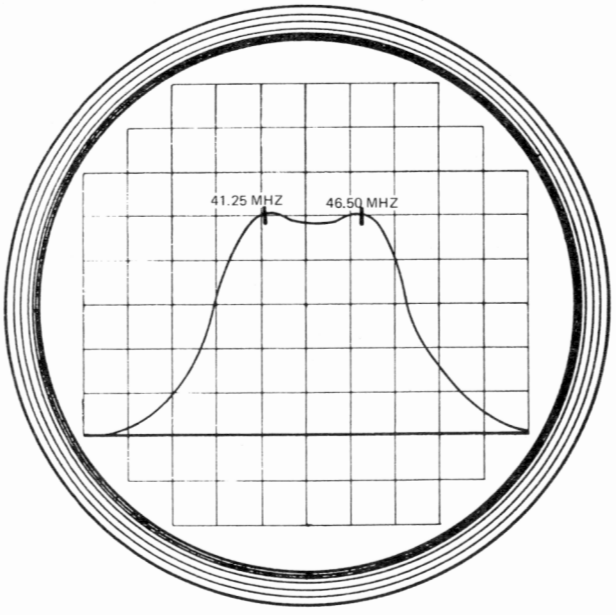


Figure 5-33. Low-Band Output Converter Overall Video Response

The gain of the video channel should be greater than 15 dB.

k. Disconnect the sweep generator RF out cable from the VIDEO IF IN connector (J4) on the rear panel of the modulator and connect it to INPUT A of the sweep adapter (figure 5-14). Tune A7L16 for the response shown in figure 5-34.

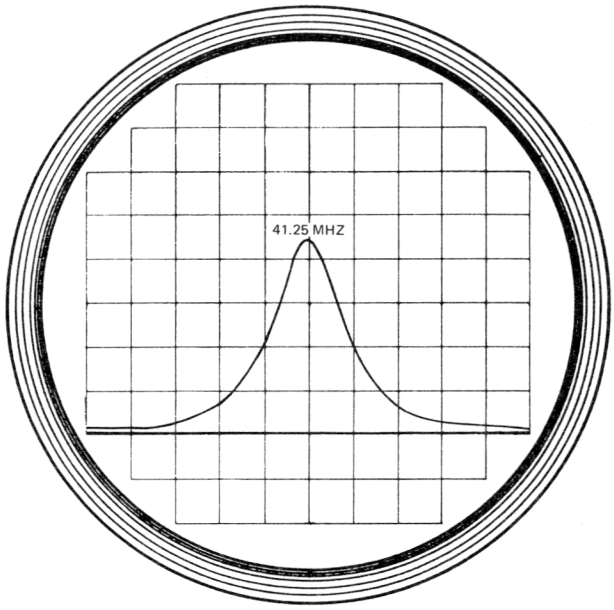


Figure 5-34. Low-Band Output Converter Overall Sound Response

The gain of the sound channel should be greater than 15 dB.

l. Install the bottom cover (small cover) on the output converter. Repeat step j.

m. Disconnect the RF out cable of the sweep generator from the sweep adapter and connect it to the VIDEO IF IN connector (J4) on the rear panel of the modulator. Repeat step i.

n. Wax all coils and install the top cover (large cover). This completes alignment of the low-band output converter.

5.6.5 MID-BAND OUTPUT CONVERTER ALIGNMENT

5.6.5.1 General. The mid-band converter differs from both the low- and high-band converters in that it combines the sound and video signals at the input of the converter and processes the combined signal in a single wideband stage. The converter consists of four basic circuits which are tuned in the following sequence:

a. Broadband Amplifier

b. Local Oscillator

c. Input Filter Section

d. Output Filter Section

After the individual sections are aligned the overall sweep response is verified and the spurious outputs are minimized.

5.6.5.2 Broadband Amplifier

a. Disconnect A7C49 at the junction of A7L27 and A7C48.

b. Plug the loose end of the 18-inch jumper cable into the output converter connector.

c. Plug the special BNC adapter (figure 5-14) into the test points A7TP1 and A7TP2.

d. Terminate the INPUT A connector of the sweep adapter in 75 ohms.

e. Calibrate the sweep setup for a VSWR measurement (figure 5-29) as follows:
   1. Terminate the "Z_2" port of the Rho-Tector with a 50-ohm load.
   2. Set the scope vertical sensitivity to 1 mV/cm.
   3. Adjust the sweep generator RF output for 1 cm of vertical deflection and the sweep width control for a 6 cm horizontal display from 54 MHz to 216 MHz. This display represents a VSWR of 1.5:1.

f. Remove the 50-ohm load and connect this port of the Rho-Tector to the special BNC adapter installed in step c.

g. Switch the POWER ON switch to the POWER ON position and tune A7C48 and A7C37 for the VSWR response shown in figure 5-35. The VSWR should be less than 1.5:1 from 54 MHz to 216 MHz.

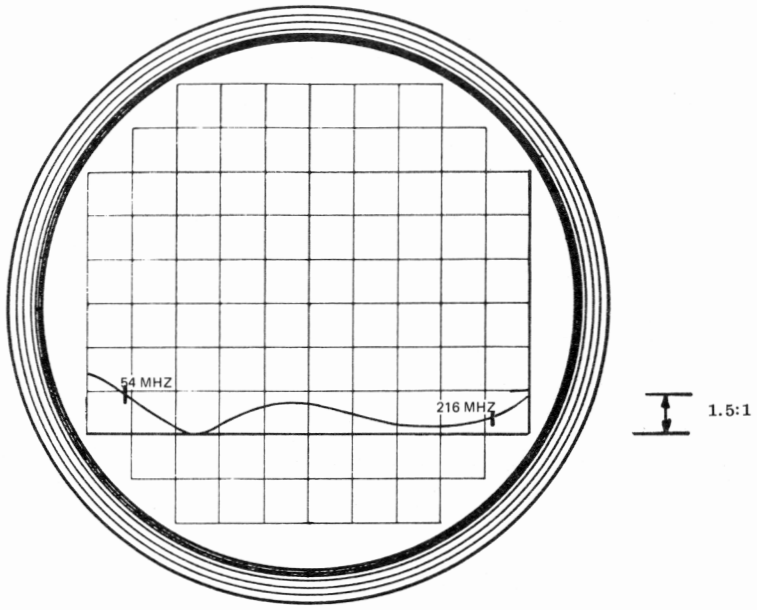


Figure 5-35. Mid-Band Output Converter Broadband Amplifier VSWR Response

h. Disconnect the Rho-Tector from the converter and from the sweep setup. Remove the special BNC adapter. This completes alignment of the broadband amplifier.

5.6.5.3 Local Oscillator

a. Set A7C21 and A7C31 to midrange.

b. Plug the special BNC adapter into A7TP4 and A7TP3.

c. Connect a Hewlett-Packard Spectrum Analyzer through a 50-75 ohm minimum loss pad to the special BNC adapter. (The minimum loss pad should be connected directly to the spectrum analyzer.)

d. Adjust the spectrum analyzer controls as follows:
   1. SCAN WIDTH to 20 MHz/division.
   2. INPUT ATTENUATION to 0 dB.
   3. LOG REFERENCE LEVEL to -10 dBm.
   4. BANDWIDTH to 100 kHz.

e. Tune the FREQUENCY of the spectrum analyzer to the crystal frequency of the channel being aligned.

f. Adjust A7C39 until a response is visible on the spectrum analyzer. The level of this response will be approximately -65 dBm.

g. Tune the spectrum analyzer to approximately twice the crystal frequency. A response at twice the crystal frequency should now be displayed on the spectrum analyzer. Adjust A7C16 and A7C29 to maximize this response.

h. Disconnect the spectrum analyzer from the special BNC adapter.

i. Using a HP-3406A RF Voltmeter measure the oscillator injection voltage at the junction of A7L9 and A7C8. The injection voltage at this point should be greater than 500 mV.

j. Connect a frequency counter to the special BNC adapter installed in paragraph 5.6.5.3, step b. The frequency should be twice the crystal frequency, ±5 kHz.

k. Disconnect the frequency counter and remove the special BNC adapter. This completes preliminary alignment of the local oscillator.

5.6.5.4 Input Filter Section

a. Plug the special BNC adapter into test points A7TP1 and A7TP2.

b. Connect the video detector (figure 5-14) to the sweep setup then to the special BNC adapter (figure 5-21).

c. Connect the sweep generator RF out cable to the VIDEO IF IN connector (J4) on the rear panel of the modulator.

d. Adjust the center frequency of the sweep generator to approximately 43 MHz.

e. With a scope sensitivity of 1 mV/cm, adjust the sweep generator output level for a scope vertical display of approximately 4 cm. Adjust the sweep generator sweep width control for a horizontal display of approximately 3 cm from 41.25 MHz to 46.50 MHz.

f. Adjust A7C9, A7C12 and A7C14 until the response is flat to within ±1/4 dB from 41.25 MHz to 46.50 MHz. A7C9 and A7C14 determine the center frequency of the response and A7C12 determines the bandwidth. The response should appear as shown in figure 5-36.

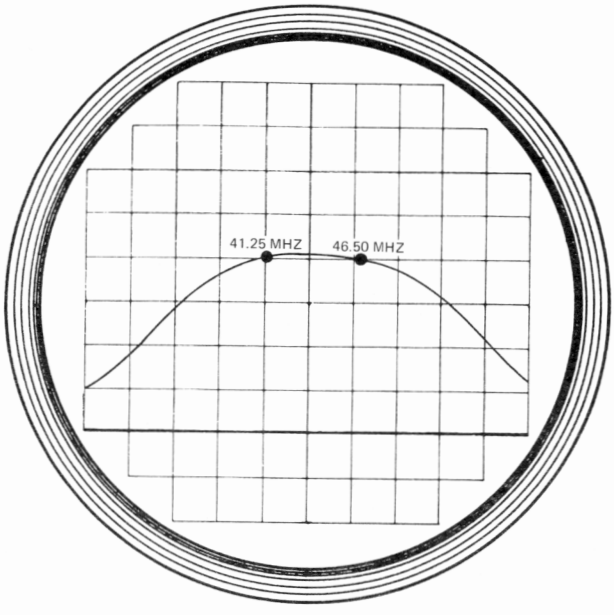


Figure 5-36. Mid-Band Output Converter - Input Filter and Broad Band Amplifier

The gain should be 14 dB, ±1 dB. Record this gain measurement for later reference.

g. Disconnect the sweep generator RF out cable from the VIDEO IF IN connector (J4) on the modulator rear panel. Disconnect the video detector from the modulator and the sweep setup. Remove the special BNC adapter. This completes preliminary alignment of the input filter section.

5.6.5.5 Output Filter Section

a. Switch the POWER ON switch to the OFF position.

b. Reconnect A7C49 at the junction of A7L27 and A7C48.

c. Calibrate the sweep setup for VSWR measurement (figure 5-29) as follows:

1. Terminate the "Z_2" port of the Rho-Tector with a 50-ohm load.
2. Set the scope vertical sensitivity to 1 mV/cm.

3. Adjust the sweep generator RF output for 1 cm of vertical deflection and the sweep width control for a 2 cm horizontal display between video and sound carrier frequencies of the channel being tuned. This display represents a VSWR of 1.5:1.

d. Remove the 50-ohm load and connect this port of the Rho-Tector to the RF OUT connector (J9) on the rear panel of the modulator.

e. Switch the POWER ON switch to the POWER ON position and adjust A7L3, A7L4, and A7C51 for the best VSWR response across the 6 MHz channel of interest. The VSWR should be less than 1.25:1. A7L3 and A7L4 determine the center frequency of the response (figure 5-37), and A7C51 determines the bandwidth.

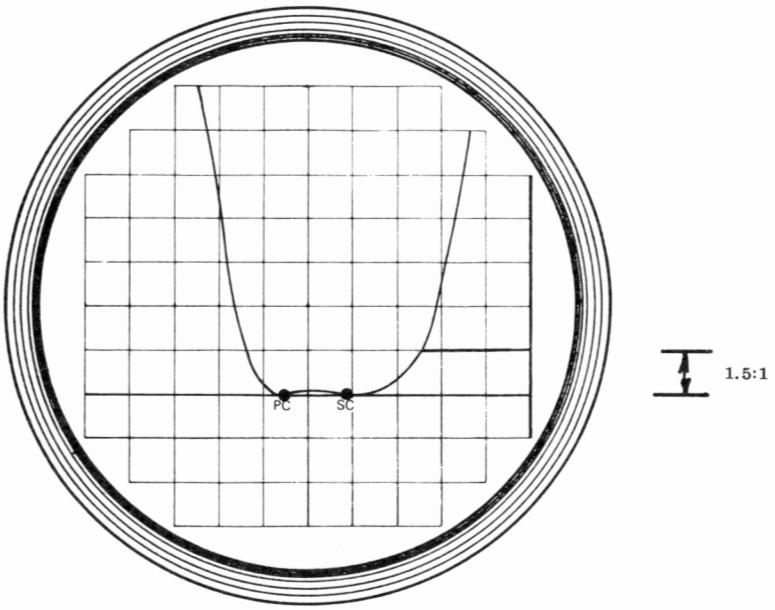


Figure 5-37. Mid-Band Output Converter VSWR Response

f. Disconnect the Rho-Tector from the modulator and the sweep setup. This completes alignment of the output filter section.

5.6.5.6 Overall Response

a. Connect the RF out cable of the sweep generator to the VIDEO IF IN connector (J4) on the rear panel of the modulator.

b. Connect the video detector (figure 5-14) to the sweep setup then to the RF OUT connector (J9) on the rear panel of the modulator.

c. Set the scope vertical sensitivity to 10 mV/cm. Adjust the sweep generator center frequency to approximately 43 MHz and adjust the RF output level for a vertical scope display of approximately 4 cm. Adjust the sweep generator sweep width control for a horizontal display of 2 cm between 41.25 MHz and 46.50 MHz.

d. Adjust A7C9, A7C12 and A7C14 for a flat response, ±1/4 dB (figure 5-38) from 41.25 MHz to 46.50 MHz.

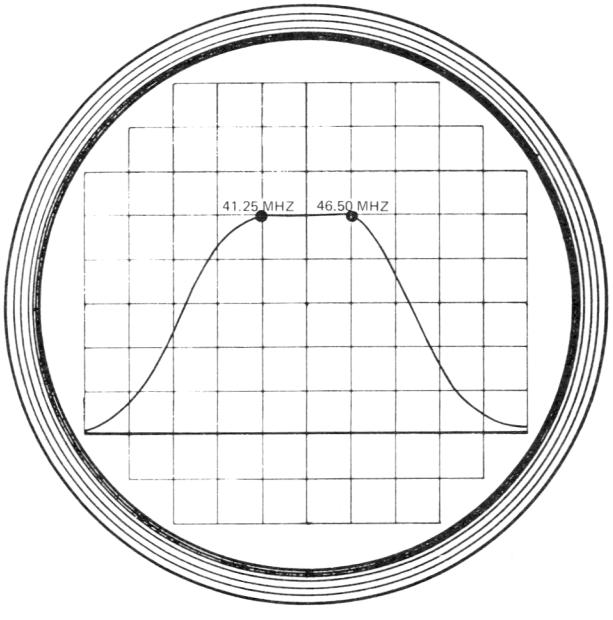


Figure 5-38. Mid-Band Output Converter Overall Response

The gain of the response should be within 1 dB of that measured in paragraph 5.6.5.4, step f.

e. Remove the video detector and the sweep generator RF out cable from the connectors on the modulator rear panel. Switch the POWER ON switch to the OFF position. This completes overall sweep alignment of the output converter.

5.6.5.7 Spurious Outputs

a. Remove the sweep adapter installed in paragraph 5.6.2, step d.

b. Remove the 6-inch jumper cable from the vestigial sideband filter chassis connector XA5. (Installed in paragraph 5.6.2, step b.)

c. Install the video modulator module, the audio modulator module, and the vestigial sideband filter module in the modulator chassis. These modules must be aligned and working properly. Set the VIDEO MODULATION control A2R18 on the front panel of the video modulator to MIDRANGE.

d. Connect a Jerrold 727 Field Strength Meter to the RF OUT connector (J9) on the rear panel of the modulator.

e. Switch the POWER ON switch to the POWER ON position.

f. Tune the field strength meter to the sound carrier frequency of the channel being aligned. Adjust the SOUND CARRIER LEVEL control A6R80 on the front panel of the audio modulator for a field strength meter reading of +40 dBmV.

g. Tune the field strength meter to the video carrier frequency of the channel being aligned. Adjust the VIDEO CARRIER LEVEL control A5R11 on the front panel of the vestigial sideband filter for a field strength meter reading of +55 dBmV.

h. Re-check the sound and video carrier frequency levels of steps f and g. In the channel of interest, the sound carrier level should be +40 dBmV and the video carrier level should be +55 dBmV. These levels must be set and verified before proceeding.

i. Disconnect the field strength meter from the RF OUT connector (J9) on the modulator rear panel. Connect a HP-Spectrum Analyzer through a 50-75 ohm minimum loss pad to the RF OUT connector (J9). The minimum loss pad should be connected directly to the spectrum analyzer.

j. Set the spectrum analyzer controls as follows:
   1. INPUT ATTENUATION to 20 dB.
   2. SCAN WIDTH to 2 MHz/division.
   3. BANDWIDTH to 100 kHz.
   4. FREQUENCY to center frequency of channel being tuned.

   The spectrum analyzer display should be similar to that shown in figure 5-39.

k. The presentation displayed on the spectrum analyzer will be slightly different for each mid-band channel. Of the three spurious outputs considered, two will appear at different locations with respect to the channel of interest. Therefore, for discussion purposes, assume that a channel "C" converter is being tuned.

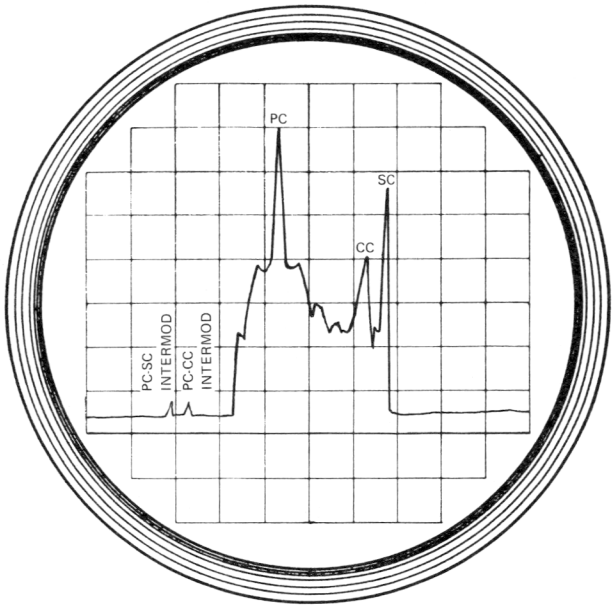


Figure 5-39. Mid-Band Output Converter Spectrum Analyzer Display

First, consider the spurious output caused by intermodulation between the video and sound carrier frequencies. This spurious output always appears 4.5 MHz below the video carrier frequency. It is sensitive to the local oscillator and will null when the LO level is peaked. The intermodulation spurious, like all spurious outputs, should be at least 60 dB below the video carrier level.

Next, consider the spurious output caused by the third harmonic of the video IF signal. In relation to channel "C" the third harmonic spurious appears 4 MHz above the video carrier frequency (i.e., 3 x VIDEO IF = VIDEO CARRIER + 4 MHz). It's amplitude depends on the gain of the converter and should be at least 60 dB below the video carrier level if the gain of the converter is sufficient.

Finally, consider the spurious output caused by the sum of the crystal frequency and the video IF signal. In relation to channel "C" this spurious appears 2 MHz above the video carrier frequency (i.e., LOCAL OSCILLATOR + VIDEO IF = VIDEO CARRIER + 2 MHz). It can be nulled by slight adjustment of A7C21 and A7C31. However, adjusting A7C21 and A7C31 lowers the LO level and it should be repeaked by adjusting A7C16 and A7C29 (a peak is indicated by a nulling of the intermodulation spurious signal). Since these adjustments interact they should be repeated several times. Table 5-2 lists the relative position of the crystal frequency plus the video IF signal for all mid-band channels.

TABLE 5-2. RELATIVE POSITION OF THE CRYSTAL FREQUENCY PLUS THE VIDEO IF SIGNAL

Channel	Crystal Freq. (MHz)	Crystal Freq. + Video IF (MHz)	Video Carrier Freq. (MHz)
A	83.5	129.25	121.25
B	86.5	132.25	127.25
C	89.5	135.25	133.25
D	92.5	138.25	139.25
E	95.5	141.25	145.25
F	98.5	144.25	151.25
G	91.5	147.25	157.25
H	104.5	150.25	163.25
I	107.5	153.25	169.25

The spectrum analyzer should always be tuned to the frequency where the spurious output occurs. Slight adjustment of A7C21 and A7C31 can then be made to insure that this spurious output signal is at least 60 dB below the desired carrier level. If it is already 60 dB down, no adjustment is necessary.

l. Tune the spectrum analyzer from 5 MHz to 300 MHz to insure that all spurious outputs are 60 dB below the video carrier level of the channel being tuned.

m. Install the bottom cover on the converter and repeat step l. If spurious output levels change, repeat paragraph 5.6.5.7, steps h through l.

n. Switch the POWER ON switch to the OFF position. Install the top cover and disconnect all test equipment. This completes alignment of the mid-band output converter.

5.6.6 HIGH-BAND OUTPUT CONVERTER ALIGNMENT

5.6.6.1 Video Channel Alignment

a. Remove the tuning slugs from A7L2 (oscillator), A7L11 (multiplier) and A7L16 (buffer). Solder a 100-ohm resistor (short leads) across A7L16.

b. Disconnect A7C39 at the junction of A7R26 and A7L17.

c. Disconnect A7C43 at the junction of A7R31 and A7L23. Solder a 75-ohm resistor (short leads) from this junction to ground.

d. Connect a BNC connector (figure 5-14) to the base of A7Q9 (2N4072) through a .0015 μF capacitor.

e. Set A7C31 and A7C29 for minimum capacitance.

f. Set A7C51 and A7C49 to the center of their range.

g. Connect the sweep generator RF out cable to the BNC connector (figure 5-21).

h. Connect the video detector (figure 5-14) to the RF OUT connector (J9) on the rear panel of the modulator.

i. Plug the loose end of the 18-inch jumper cable into the output converter connector.

j. Switch the POWER ON switch to the POWER ON position.

k. With a scope sensitivity of 1 mV/cm, set the sweep generator center frequency for a scope display at the channel frequency of the output converter being tuned.

l. Tune A7L25 and A7L21 until the displayed response is centered around the center of the channel being tuned.

m. Disconnect the video detector and sweep generator. Connect the RF output of a HP-608 Signal Generator to the RF OUT connector (J9) on the rear panel of the modulator. Connect a HP-3406A RF Voltmeter to the BNC connector temporarily installed in step d. Adjust the HP-608 for the center frequency of the channel being tuned (half way between sound and picture frequencies) and set the RF output level for approximately 500 mV. Adjust the output converter neutralizing capacitor A7C47 for minimum voltage as read on the RF voltmeter. A distinct voltage null should be observed. Decrease the HP-608 output level; the RF voltmeter reading should also decrease.

n. Disconnect the HP-608 and the RF voltmeter. Switch the POWER ON switch to the OFF position and remove the temporary BNC connector. Solder the loose end of A7C39 to the A7R26, A7L17 junction.

o. Calibrate the sweep setup for VSWR measurement (figure 5-29) as follows:

1. Terminate the "Z_2" port of the Rho-Tector with a 50-ohm load.
2. Set the scope vertical sensitivity to 1 mV/cm.
3. Adjust the sweep generator RF output for 1 cm of vertical deflection and the sweep width control for a 2 cm horizontal display between video and sound carrier frequencies of the channel being tuned. This display represents a VSWR of 1.5:1.

p. Remove the 50-ohm load and connect this port of the Rho-Tector to the RF OUT connector (J9) on the rear panel of the modulator.

q. Switch the POWER ON switch to the POWER ON position and tune A7L21, A7L25, A7C49, and A7C51 for the best VSWR response (figure 5-40). The VSWR should be less than 1.35:1.

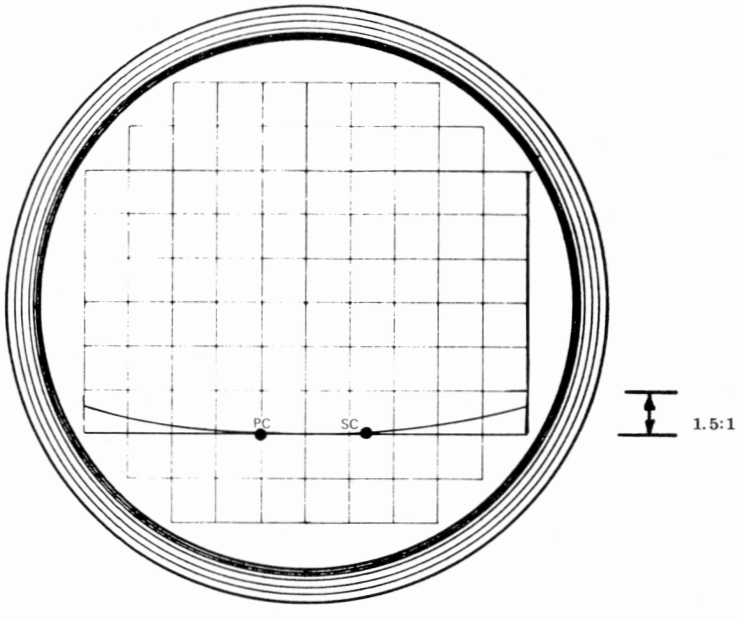


Figure 5-40. High-Band Output Converter VSWR Response

r. Switch the POWER ON switch to the OFF position. Remove the 75-ohm resistor installed in step c. Replace the lifted end of A7C43. Switch the POWER ON switch to the POWER ON position and, if necessary, adjust A7L20 and A7C43 to regain the VSWR response of step q. Disconnect the Rho-Tector from the modulator and from the sweep setup.

s. Switch the POWER ON switch to the OFF position. Connect the BNC connector (figure 5-14) to the base of A7Q3 (video mixer) through a .0015 μF capacitor. Connect the sweep generator RF output to the BNC connector. Connect the video detector to the sweep setup then to the RF OUT connector (J9) on the rear panel of the modulator. Switch the POWER ON switch to the POWER ON position and adjust the sweep generator RF output for a scope display of 4 divisions (the center frequency should already be at channel from previous steps).

t. Tune A7L12, A7L15, A7L19 and A7C20 for a response as shown in figure 5-41 (A7C20 controls the bandwidth).

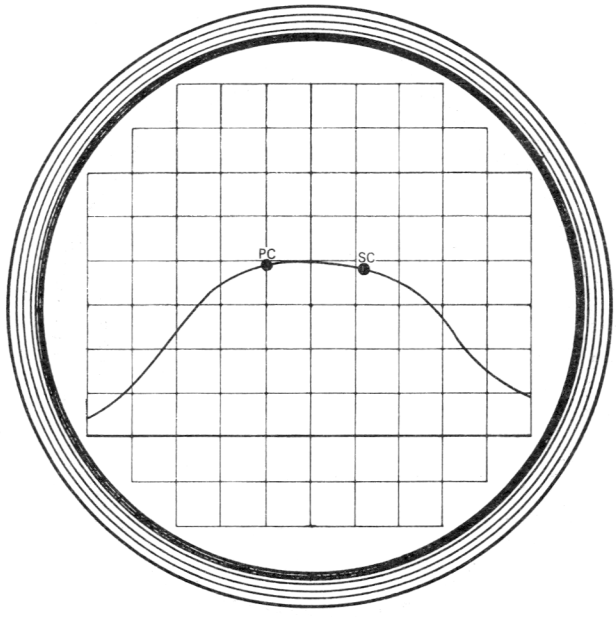


Figure 5-41. High-Band Output Converter Video Channel Response

u. Switch the POWER ON switch to the OFF position. Remove the temporary BNC connector from the base of A7Q3. Preliminary alignment of the video channel is now complete.

5.6.6.2 Sound Channel Alignment

a. With the POWER ON switch in the OFF position, connect the BNC connector to the base of A7Q4 (sound mixer) through a .0015 μF capacitor. Connect the sweep generator RF output cable to the BNC connector. Leave the video detector connected to the RF OUT

connector (J9) on the rear panel of the modulator.

b. Switch the POWER ON switch to the POWER ON position and tune A7L13 and A7L18 for a response as shown in figure 5-42.

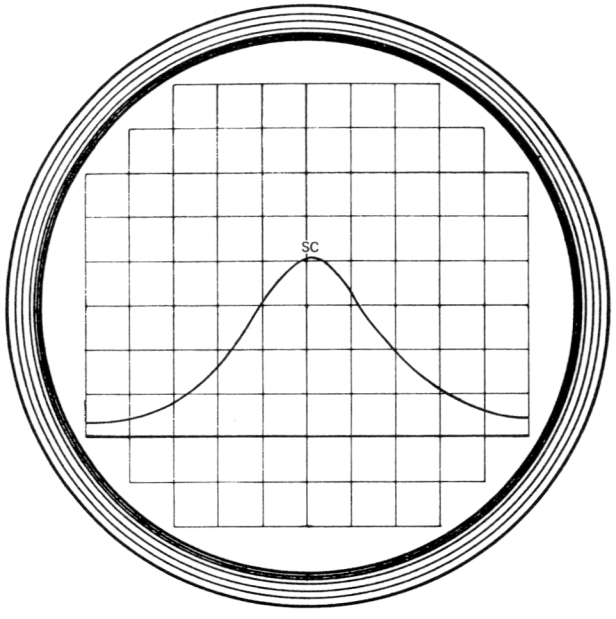


Figure 5-42. High-Band Output Converter Sound Channel Response

c. Switch the POWER ON switch to the OFF position and remove the temporary BNC connector. This completes preliminary alignment of the sound channel.

5.6.6.3 Local Oscillator Alignment

a. With the POWER ON switch in the OFF position, remove the 100-ohm resistor temporarily installed across A7L16 in paragraph 5.6.6.1, step a.

b. Replace the tuning slugs in A7L2, A7L11 and A7L16 and position these slugs in the center of the coil forms.

c. Connect the sweep generator RF out cable to the VIDEO IF IN connector (J4) on the rear panel of the modulator. The video detector should still be connected to the RF OUT connector (J9) on the rear panel of the modulator.

d. Adjust the sweep generator controls for an IF response display on the scope (i.e., the center frequency control should be set for approximately 43 MHz and the sweep width control should be set for a 2 cm display between 41.25 MHz and 46.50 MHz).

e. Switch the POWER ON switch to the POWER ON position. Tune A7L2 until the response dips. When A7L2 is tuned to either side of this dip the response should slightly peak then fall off rapidly. The response dips when the base line peaks.

f. Tune A7L11 and A7L16 until a dip in the response is observed. A7L11 and A7L16 should behave in a manner similar to A7L2 in step e.

g. Remove the sweep generator RF output cable from the VIDEO IF IN connector (J4) on the rear panel of the modulator. With the HP-3406A RF Voltmeter measure the oscillator injection voltage at the base of A7Q3. Peak A7L2, A7L11, and A7L16 while monitoring the RF voltmeter. The injection voltage at this point should be greater than 400 mV. If the level is less than 400 mV change A7R34 from 4.7 kilohm to 3.9 kilohm. If the level is still less than 400 mV, leave A7R34 at 3.9 kilohm and increase A7R13 until the 400 mV level is obtained.

h. Connect a frequency counter to the base of A7Q3. The frequency should be twice the crystal frequency, ±5 kHz.

i. Remove the frequency counter and connect the sweep generator RF out cable to the VIDEO IF IN connector (J4) on the rear panel of the modulator. Tune A7C31 and A7C29 for a dip in the base line of the sweep response. Tune A7L12, A7L15, A7L19 and A7C20 for the response shown in figure 5-43. The gain of the video channel should be greater than 15 dB.

j. Disconnect the sweep generator RF out cable from the VIDEO IF IN connector (J4) on the rear panel of the modulator and connect it to INPUT A of the sweep adapter (figure 5-14). Tune A7C29 for a dip in the base line of the sweep response. Tune A7L13 and A7L18 for the response shown in figure 5-44. The gain of the sound channel should be greater than 15 dB.

k. Install the bottom cover (small cover) on the output converter. Repeat steps i and j.

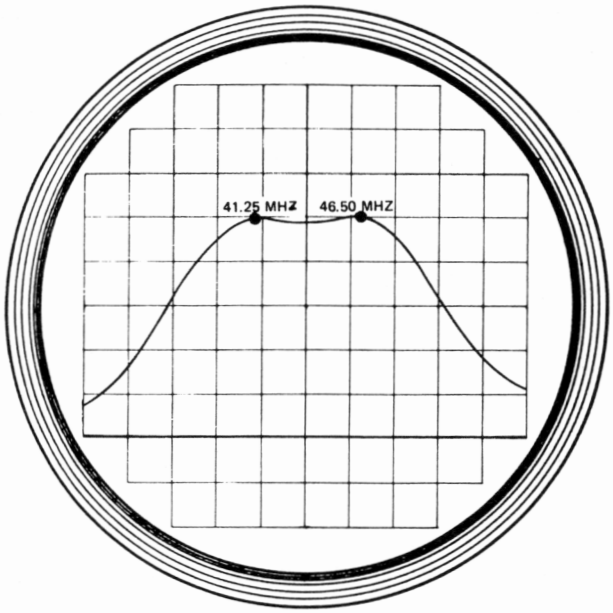


Figure 5-43. High-Band Output Converter Overall Video Response

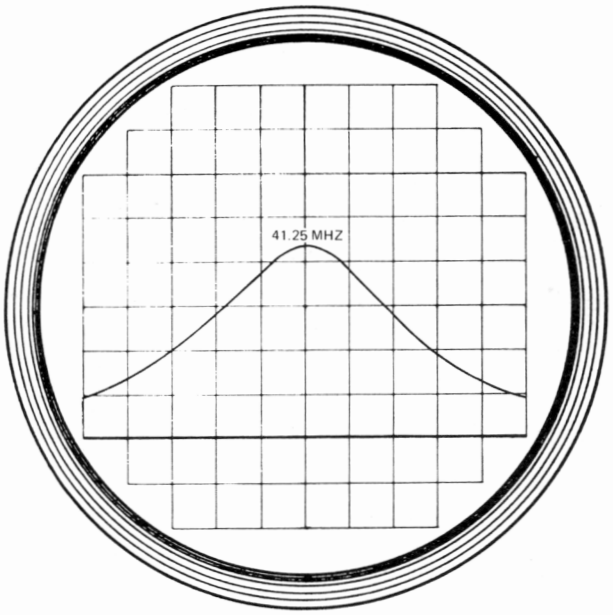


Figure 5-44. High-Band Output Converter Overall Sound Response

l. Disconnect the RF out cable of the sweep generator from the sweep adapter and connect it to the VIDEO IF IN connector (J4) on the rear panel of the modulator. Repeat step i.

m. Wax all coils and install the top cover (large cover). This completes alignment of the high-band output converter.

5.7 AUDIO MODULATOR (A6)

5.7.1 PRELIMINARY

a. Perform the following with the POWER ON switch in the OFF position:

1. Remove all plug in modules except the power supply and meter circuit module.
2. Remove all rear panel terminations and cables.
3. Using the 6-inch jumper cable (figure 5-14) jumper pins "X" and "N" of the output converter chassis connector XA7 (bottom and center coaxial pins).
4. Plug an extender card in the audio modulator chassis connector XA6.
5. Plug the sweep adapter (figure 5-14) into the video modulator chassis connector XA2.

b. Visually inspect the PC board (A6) for solder bridges and other obvious mistakes. Check the dogbone capacitors located near coil shield cans to insure that they are not shorted. Check insertion of transistors for correct lead location.

5.7.2 AUDIO MODULATOR (A6) ALIGNMENT

The audio modulator consists of seven basic circuits which must be checked separately and in the sequence given in order to avoid undesired interaction between circuits. This sequence is:

a. 41.25 MHz Amplifier

b. Balanced Mixer

c. 300 kHz Discriminator

d. 4.2 MHz Crystal Oscillator

e. 4.5 MHz Varactor Controlled Oscillator

f. AFC Error Amplifier

g. Audio Amplifier

Shorting jumpers are provided on the PC board and indicated on the schematic. These shorting jumpers must be in place in order to disable the circuits not under test.

5.7.3 41.25 MHZ AMPLIFIER

a. Connect a BNC connector (figure 5-14) to the emitter of A6Q10 (2N3866) through a .0015 μF capacitor.

b. Preset the tuning slugs of A6L6, A6L7, A6L8 and A6L9 by adjusting them halfway into the coil form.

c. Set the SOUND CARRIER LEVEL control A6R80 on the front panel of the audio modulator maximum CW.

d. Plug the audio modulator (A6) into the extender card.

e. Connect the sweep generator RF out cable (figure 5-21) to the BNC connector temporarily installed in step a.

f. Connect the video detector (figure 5-14) to the sweep setup then to the RF OUT connector (J9) on the rear panel of the modulator.

g. Set the controls on the sweep and marker generators to display a response at 41.25 MHz.

h. Switch the POWER ON switch to POWER ON position and with a scope sensitivity of 1 mV/cm tune coils A6L6 through A6L9 for a single peaked response as shown in figure 5-45. Markers at 41.0 MHz and 41.5 MHz should be no more than 3 dB down from the peak of the response. Coil A6L9 can slightly vary the bandwidth. The amplifier gain should be approximately -5 dB with the SOUND CARRIER LEVEL control maximum CW. This specification is given only as an indication of proper operation of the circuit. The actual gain will be adjusted later, if necessary.

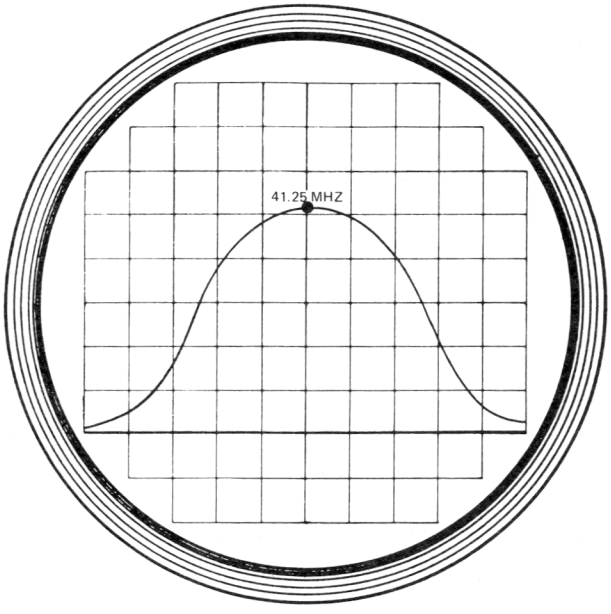


Figure 5-45. 41.25 MHz Amplifier Sweep Response

i. Switch the POWER ON switch to the OFF position. Disconnect the sweep generator RF out cable from the BNC connector. Remove the BNC connector from the audio modulator. Disconnect the video detector from the RF OUT connector (J9) on the rear panel of the modulator. This completes sweep alignment of the 41.25 MHz amplifier.

5.7.4 BALANCED MIXER

a. Connect the RF output of a HP-608 Signal Generator to the INPUT A connector of the sweep adapter.

b. Set the HP-608 to a frequency of 45.75 MHz and adjust the output level for 500 mV.

c. Connect a wide band scope through a X10 Probe to the emitter of A6Q10 (2N3866).

d. Adjust A6R69 for minimum 45.75 MHz signal. The signal should be approximately 50 mV peak-to-peak at the null and increase to approximately 400 mV peak-to-peak at the two extremes of potentiometer rotation.

e. Disconnect the scope and the HP-608 output cable. This completes the balanced mixer test.

5.7.5 300 KHZ DISCRIMINATOR

a. Switch the POWER ON switch to the OFF position.

b. Connect a BNC connector through a 0.1 μF capacitor to the base of A6Q7 (2N3947). A connector similar to the one shown in figure 5-14 may be used.

c. Connect a DC coupled scope through a X1 Probe to the junction of A6R28 and A6R29 (both 15 kilohm resistors).

d. Connect the 50-ohm output of a HP-651A Oscillator to the BNC connector installed in step b. Adjust the oscillator output level for 15 mV rms at a frequency of 250 kHz.

e. With the scope input grounded, adjust the vertical centering so that the scope trace is positioned at the center of the graticule. The scope vertical sensitivity should be set for 1V/cm.

f. Switch the POWER ON switch to the POWER ON position.

g. With the scope DC coupled, tune A6L1 for maximum negative trace deflection (approximately -1V).

h. Change the frequency of the HP-651A Test Oscillator to 350 kHz.

i. Tune A6L2 for maximum positive scope trace deflection (approximately +1V).

j. Vary the frequency of the HP-651A from 350 kHz to 250 kHz, the discriminator output as seen on the scope should be maximum at these two frequencies and pass through zero at approximately 300 kHz.

k. Switch the POWER ON switch to the OFF position. Remove the scope probe, the HP-651A output cable and the BNC connector. This completes the discriminator circuit test.

5.7.6 4.2 MHZ CRYSTAL OSCILLATOR

a. Cut the shorting jumper which shorts the base of A6Q8 (2N3947) to ground.

b. Connect a wideband scope through a X10 Probe to the junction of A6R56 10 kilohm) and A6R59 (820 ohm).

c. Switch the POWER ON switch to the POWER ON position.

d. With a scope sensitivity of 20 mV/cm, tune A6L4 for maximum 4.2 MHz output. The oscillator output level should be approximately 600 mV peak-to-peak.

e. Switch the power on and off several times to insure that the oscillator starts reliably.

f. Switch the POWER ON switch to the OFF position and disconnect the scope probe. This completes the oscillator test.

5.7.7 4.5 MHZ VARACTOR CONTROLLED OSCILLATOR

a. With the POWER ON switch in the OFF position, cut the shorting jumper which shorts the base of A6Q6 to ground.

b. Connect a frequency counter through a X1 Scope Probe to the emitter of A6Q9 (2N3947).

c. Switch the POWER ON switch to the POWER ON position and tune A6L3 for a frequency of 4.50 MHz ±1.0 kHz.

d. Remove the X1 Scope Probe and connect a wideband scope through a X10 Scope Probe to the emitter of A6Q9 (2N3947). The oscillator output level at this point should be approximately 1.5V peak-to-peak.

e. Switch the POWER ON switch to the OFF position. Disconnect the scope probe. This completes the 4.5 MHz varactor oscillator test.

5.7.8 AFC ERROR AMPLIFIER

a. With the POWER ON switch in the OFF position, temporarily lift one end of A6R23 (15 kilohm).

b. Short the wiper of A6R25 (4.5 MHz frequency adjust) to ground with a clip lead. The wiper can be grounded at the junction of A6R25 and and A6R24 (56 kilohm).

c. Connect a DC coupled scope through a X1 Probe to pin 6 of A6IC1. This point is accessible at the junction of A6R3 (33 kilohm) and A6R16 (4.7 megohm).

d. Set the scope vertical sensitivity to 0.1V/cm and adjust the vertical centering so that the trace is at the center of the graticule with the scope input grounded. Reset the scope vertical input to the DC coupled position.

e. Switch the POWER ON switch to the POWER ON position and adjust A6R18 for a 0V output from A6IC1. Increase the scope sensitivity, check the ground reference level and again adjust A6R18 for 0V as seen on the scope. (Note that the output will drift around at the lower scope sensitivities. Set it as close to zero as possible and proceed to the next step.)

f. Switch the POWER ON switch to the OFF position. Remove the scope probe. Remove the clip lead from A6R25 wiper to ground. Reconnect the lifted end of A6R23 (15 kilohm). This completes the AFC error amplifier test.

5.7.9 AFC CLOSED LOOP TEST

a. Connect a frequency counter through a X1 Probe to the emitter of A6Q9.

b. Switch the POWER ON switch to the POWER ON position and adjust A6L3 for a frequency of 4.5 MHz. (The frequency will drift. Set it as close as possible and proceed to the next step.)

c. Switch the POWER ON switch to the OFF position. Cut the shorting jumper across A6R2 (2.2 kilohm).

d. Switch the POWER ON switch to the POWER ON position and check the frequency range produced by A6R25. The frequency should vary 5 kHz above and 5 kHz below 4.5 MHz as A6R25 is turned from one extreme to the other (4.495 MHz to 4.505 MHz).

e. When the frequency range produced by A6R25 is verified, set A6R25 for a frequency of 4.500 MHz ±250 Hz (4499.750 kHz to 4500.250 kHz).

f. Remove and restore power several times to insure that the oscillator starts reliably and locks at 4.500 MHz ±250 Hz.

g. Switch the POWER ON switch to the OFF position. Disconnect the frequency counter from the audio modulator. This completes the AFC closed loop test.

5.7.10 AUDIO AMPLIFIER TEST

a. Connect the 600-ohm output of a HP-651A Test Oscillator to a 600-ohm balanced to 600-ohm unbalanced matching transformer such as a Triad A-67J (figure 5-14). Connect the balanced transformer secondary to the

BALANCED AUDIO INPUT banana jacks (J5) on the rear panel of the modulator.

b. Adjust the oscillator frequency to 1 kHz and set the output level to 0.1V rms.

c. Turn the FM DEVIATION control A6R5 on the front panel of the audio modulator maximum CW.

d. Connect a scope to the front panel upper test point.

e. Switch the POWER ON switch to the POWER ON position and adjust the scope controls to display several cycles of the 1 kHz sinewave. The amplitude of the 1 kHz sinewave should be approximately 1V peak-to-peak.

f. Increase the HP-651 output level until a 2.0V peak-to-peak signal is displayed on the scope. This signal should be undistorted relative to the 0.1V input from the balanced transformer. The RF present in the 1 kHz display is a result of the 4.5 MHz varactor oscillator and can be eliminated by disabling A6Q6.

g. Disconnect the scope probe, the HP-651A, and the balanced transformer. This completes the audio amplifier test.

5.7.11 41.25 MHZ AMPLIFIER OUTPUT LEVEL TEST

a. With the POWER ON switch in the POWER ON position connect the output of a HP-608 Signal Generator to the INPUT A connector of the sweep adapter. Set the frequency of the HP-608 to 45.75 MHz and adjust the output level for 500 mV.

b. Connect a Jerrold Model 727 Field Strength Meter to the RF OUT connector (J9) on the rear panel of the modulator.

c. Set the SOUND CARRIER LEVEL control A6R8 on the front panel of the audio modulator maximum CW.

d. Tune the field strength meter to 41.25 MHz. The 41.25 MHz output level as read on the field strength meter should be a minimum of +33 dBmV. If a +33 dBmV cannot be obtained reduce the value of A6R78 until a +33 dBmV is obtained. If a reduction in the value of A6R78 from 120 ohms to 0 ohms does not increase the level more than 2 dB and this increase is not sufficient, leave the value of A6R78 at 120 ohms and decrease the value of A6R75 until sufficient

output is obtained. If a reduction in the value of A6R78 from 120 ohms to 0 ohms increases the output level more than 2 dB and this is still not sufficient, leave A6R78 at 0 ohms and reduce the value of A6R75 until sufficient output is obtained.

e. Adjust the SOUND CARRIER LEVEL control A6R8 maximum CCW. The output level as read on the field strength meter should be less than +15 dBmV. If the level is greater than +15 dBmV, increase the value of A6R78 until a level less than +15 dBmV is obtained.

f. Set the SOUND CARRIER LEVEL control A6R8 for a field strength meter reading of +30 dBmV.

g. Change the field strength meter input cable from the RF OUT connector (J9) to the SOUND IF OUT connector (J8) on the modulator rear panel. Terminate the RF OUT connector (J9) in 75 ohms. The level at this point should be approximately +10 dBmV (20 dBmV below the RF OUT level).

h. Switch the POWER ON switch to the OFF position. Remove the audio modulator from the extender card. Remove the extender card from the modulator chassis. Wax all coils and install both covers on the module (large cover on the back).

i. Plug the audio modulator into the modulator chassis. Repeat paragraph 5.7.11, step a through g to verify the output levels. This completes alignment of the audio modulator.

5.8 4.5 MHZ CONVERTER (A6.1)

5.8.1 PRELIMINARY

a. Perform the following with the POWER ON switch in the OFF position:

1. Remove all plug-in modules except the power supply and meter circuit module.
2. Remove all rear panel terminations and cables.
3. Switch the COMBINED-SEPARATE, VIDEO and 4.5 MHz switch (S2) on the modulator rear panel to the COMBINED position.

4. Plug the sweep adapter (figure 5-14) into the video modulator chassis connector XA2.
5. Using the 6-inch jumper cable (figure 5-14) jumper pins "X" and "N" of the output converter chassis connector XA7 (bottom and center coaxial pins).
6. Plug an extender card into the audio modulator (4.5 MHz converter) chassis connector XA6.

b. Visually inspect the PC board (A6A) for solder bridges and other obvious mistakes. Check the dogbone capacitors located near coil shield cans to insure that they are not shorted. Check insertion of transistors for correct lead location.

5.8.2 4.5 MHZ CONVERTER ALIGNMENT

The 4.5 MHz Converter consists of four basic circuits which include:

a. 41.25 MHz Amplifier

b. Balanced Mixer

c. 4.5 MHz Separator

d. Phase Equalizer

Alignment begins with the 41.25 MHz amplifier then progresses to the balanced mixer. Next, the 4.5 MHz separater is aligned and finally the output level range is adjusted and verified.

CAUTION

The phase equalizer circuit contains one tunable coil (A6AL1). However, this coil is factory selected and MUST NOT BE TUNED.

5.8.2.1 41.25 MHz Amplifier

a. Connect a BNC connector (figure 5-14) to the emitter of A6AQ5 (2N3866) through a .0015 μF capacitor.

b. Preset the tuning slugs of A6AL12, A6AL13, A6AL14, and A6AL15 by adjusting them half way into the coil form.

c. Set the SOUND CARRIER LEVEL control A6AR44 on the front panel of the 4.5 MHz converter maximum CW.

d. Plug the 4.5 MHz converter (A6A) into the extender card.

e. Connect the sweep generator RF out cable (figure 5-21) to the BNC connector temporarily installed in step a.

f. Connect the video detector (figure 5-14) to the sweep setup then to the RF OUT connector (J9) on the rear panel of the modulator.

g. Set the controls on the sweep and marker generators to display a response at 41.25 MHz.

h. Switch the POWER ON switch to the POWER ON position and with a scope sensitivity of 1 mV/cm tune coils A6AL12 through A6AL15 for a single peaked response as shown in figure 5-45.

Markers at 41.0 MHz and 41.5 MHz should be no more than 3 dB down from the peak of the response. Coil A6AL15 can slightly vary the bandwidth. The amplifier gain should be approximately -5 dB with the SOUND CARRIER LEVEL control maximum CW. This specification is given only as an indication of proper operation of the circuit. The actual gain will be adjusted later, if necessary.

i. Switch the POWER ON switch to the OFF position. Disconnect the sweep generator RF out cable from the BNC connector. Remove the BNC connector from the 4.5 MHz converter. Disconnect the video detector from the RF OUT connector (J9) on the rear panel of the modulator. Disconnect the video detector (figure 5-14) from the sweep setup. This completes alignment of the 41.25 MHz amplifier.

5.8.2.2 Balanced Mixer

a. Connect the RF output of a HP-608 Signal Generator to the INPUT A connector of the sweep adapter.

b. Set the HP-608 to a frequency of 45.75 MHz and adjust the output level for 500 mV.

c. Connect a wideband scope through a X10 Probe to the emitter of A6AQ5 (2N3866).

d. Switch the POWER ON switch to the POWER ON position and adjust A6AR33 for minimum 45.75 MHz signal. The signal should be approximately 50 mV peak-to-peak at the null and increase to

approximately 400 mV peak-to-peak at the two extremes of potentiometer rotation.

e. Disconnect the scope and the HP-608 output cable. This completes the balanced mixer test.

5.8.2.3 4.5 MHz Separator

CAUTION

Do not adjust the slug in coil A6AL1.

a. Connect the sweep generator RF out cable to the 4.5 MHz or VIDEO and 4.5 MHz connector (J6) on the rear panel of the modulator.

b. Adjust the sweep generator center frequency to approximately 4.5 MHz. Adjust the marker generator to produce a marker at 4.5 MHz.

c. Connect a long time constant video detector (figure 5-14) to the sweep setup then to the VIDEO IN connector (J1) on the rear panel of the modulator.

d. With a scope sensitivity of 0.1V/cm, tune A6AL6 and A6AL8 for a notch at 4.5 MHz (figure 5-46).

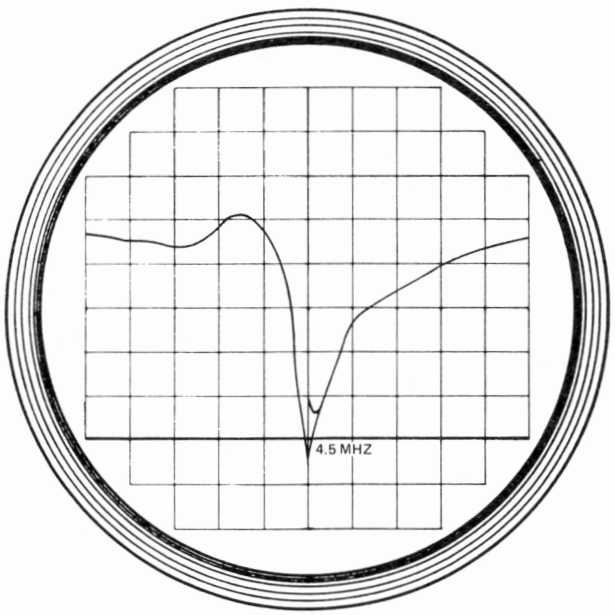


Figure 5-46. 4.5 MHz Converter/Separator Sweep Response

e. Disconnect the sweep generator RF out cable from the modulator. Disconnect the long time constant video detector from the modulator and the sweep setup.

f. Connect the 50-ohm output of a HP-651A Test Oscillator to the 4.5 MHz or VIDEO and 4.5 MHz connector (J6) on the rear panel of the modulator.

g. Adjust the HP-651A for an output level of 0.1V rms at a frequency of 4.5 MHz.

h. Connect a scope through a X10 Probe to the junction of A6AR10 and A6AR13.

i. Adjust A6AC14 for maximum 4.5 MHz signal.

j. Change the HP-651 frequency to 3.58 MHz and increase the output level to 1.0V rms.

k. Tune A6AC19 for minimum 3.58 MHz signal.

l. Move the scope probe to the base of A6AQ4 (2N3947).

m. Return the HP-651 frequency to 4.5 MHz and adjust the output level for 1 mV rms.

n. Tune A6AC29 for maximum 4.5 MHz signal.

o. Increase the HP-651 output level until limiting of the 4.5 MHz signal occurs. Limiting should begin as the HP-651 output level approaches 8 mV rms.

p. Disconnect the scope probe from the converter module and the HP-651 output cable from the modulator. This completes the 4.5 MHz separator alignment.

5.8.2.4 41.25 MHz Amplifier Output Level Test

a. Connect the output of a HP-608 Signal Generator to the INPUT A connector of the sweep adapter. Set the frequency of the HP-608 to 45.75 MHz and adjust the output level for 500 mV.

b. Connect the 50-ohm output of a HP-651A Test Oscillator to the 4.5 MHz or VIDEO and 4.5 MHz connector (J6) on the rear panel of the modulator. Set the frequency of the HP-651A to 4.5 MHz and adjust the output level for 100 mV rms.

c. Connect a Jerrold Model 727 Field Strength Meter to the RF OUT connector (J9) on the modulator rear panel.

d. Set the SOUND CARRIER LEVEL A6AR44 on the front panel of the 4.5 MHz converter maximum CW.

e. Tune the field strength meter to 41.25 MHz. The 41.25 MHz output level as read on the field strength meter should be a minimum of +33 dBmV. If a +33 dBmV cannot be obtained, reduce the value of A6AR42 until a +33 dBmV is obtained. If a reduction in the value of A6AR42 from 120 ohms to 0 ohms does not increase the level more than 2 dB and this increase is not sufficient, leave the value of A6AR42 at 120 ohms and decrease the value of A6AR39 until sufficient output is obtained. If a reduction in the value of A6AR42 from 120 ohms to 0 ohms increases the output level more than 2 dB and this is still not sufficient, leave A6AR42 at 0 ohms and reduce the value of A6AR39 until sufficient output is obtained.

f. Adjust the SOUND CARRIER LEVEL control A6AR44 maximum CCW. The output level as read on the field strength meter should be less than +15 dBmV. If the level is greater than +15 dBmV, increase the value of A6AR42 until a level less than +15 dBmV is obtained.

g. Set the SOUND CARRIER LEVEL control A6AR44 for a field strength meter reading of +30 dBmV.

h. Change the field strength meter input cable from the RF OUT connector (J9) to the SOUND IF OUT connector (J8) on the modulator rear panel. Terminate the RF OUT connector (J9) in 75 ohms. The level at this point should be approximately +10 dBmV (20 dBmV below the RF OUT level).

i. Switch the POWER ON switch to the OFF position. Remove the 4.5 MHz converter from the extender card. Remove the extender card from the modulator chassis. Wax all coils and install both covers on the module (large cover on the back).

j. Plug the 4.5 MHz converter into the modulator chassis. Switch the POWER ON switch to the POWER ON position and repeat steps a through h to verify the output levels. This completes alignment of the 4.5 MHz converter.

5.9 VIDEO MODULATOR (A2)

5.9.1 PRELIMINARY

a. Perform the following with the POWER ON switch in the OFF position:

1. Remove the output converter and video modulator plug-in modules. All other plug-in modules must be installed in the modulator chassis. (The 45.75 MHz oscillator receives B+ through relay A5K1 in the vestigial sideband filter.)
2. Remove all rear panel terminations and cables.
3. Install an extender card in the video modulator chassis connector XA2.
4. Using the 6-inch jumper cable (figure 5-14), jumper pins "C" and "N" of the output converter chassis connector XA7 (top and center coaxial pins).

b. Visually inspect the video modulator PC board (A2) for solder bridges and other obvious mistakes. Check insertion of transistors for correct lead location.

5.9.2 VIDEO MODULATOR (A2) ALIGNMENT

The purpose of this procedure is to perform preliminary adjustments and verify proper operation but not calibration. The video modulator consists of two main sections; the 45.75 MHz Local Oscillator and the Video Modulation Channel alignment begins with the local oscillator, then progresses through the video channel where output level and white level clipper operations are verified.

5.9.2.1 Local Oscillator Alignment

a. Plug the video modulator into the extender card.

b. Switch the POWER ON switch to the POWER ON position.

c. Using a X10 Probe and a wideband scope, look at the output side of A2C20 (pin 17 of the video modulator).

d. Tune A2L2 for maximum oscillator output. The output level should be approximately 1.5V peak-to-peak.

e. Connect a frequency counter to the output side of A2C20. The frequency should be 45.75 MHz ±2.5 kHz.

f. Switch the power on and off several times; the frequency should not change. This completes alignment of the local oscillator.

5.9.2.2 Video Modulation Channel

Note

The vestigial sideband filter must be operating properly before proceeding.

a. Inject a ten-step staircase video signal from a Tektronix Type 146 NTSC Generator into the VIDEO IN connector (J1) on the rear panel of the modulator.

b. Connect a Jerrold 727 Field Strength Meter to the RF OUT connector (J9) on the rear panel of the modulator.

c. Turn the VIDEO CARRIER LEVEL control (A5R11) on the front panel of the vestigial sideband filter maximum CW.

d. Tune the field strength meter to 45.75 MHz.

e. Set the VIDEO MODULATION control (A2R18) on the front panel of the video modulator to MIDRANGE.

f. Adjust A2R30 (carrier adjust) for a field strength meter reading of +46.5 dBmV. Turning the VIDEO MODULATION control (A2R18) maximum ccw will cause the field strength meter reading to increase to +47 dBmV.

g. Disconnect the field strength meter from the RF OUT connector (J9) on the rear panel of the modulator.

h. Connect a wideband scope to the RF OUT connector (J9) on the modulator rear panel. Use a BNC "TEE" at the scope input and terminate the input in 75 ohms.

i. Turn the VIDEO MODULATION control (A2R18) on the front panel of the video modulator maximum CW. Adjust the white level clipper potentiometer A2R40 maximum ccw. Observe the scope display and set the scope controls for the response shown in figure 5-47.

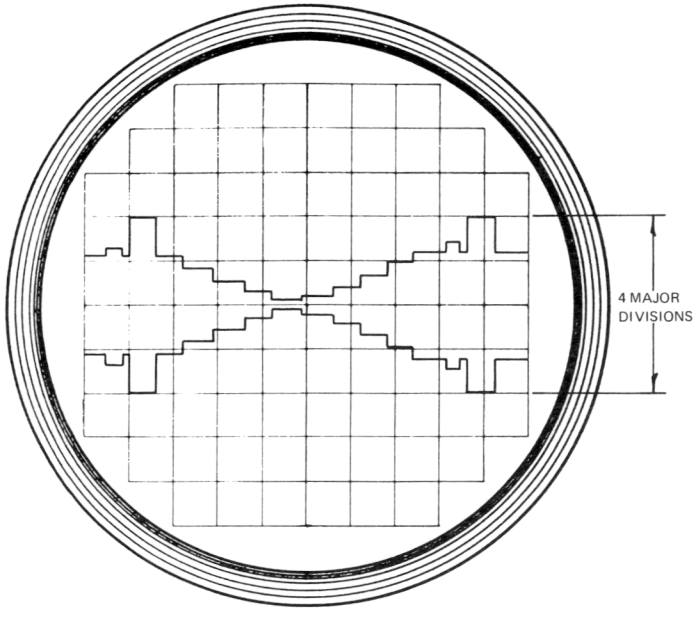


Figure 5-47. Video Modulator Overmodulation

j. Adjust the VIDEO MODULATION control (A2R18) on the front panel of the video modulator ccw until the scope display resembles the response shown in figure 5-48.

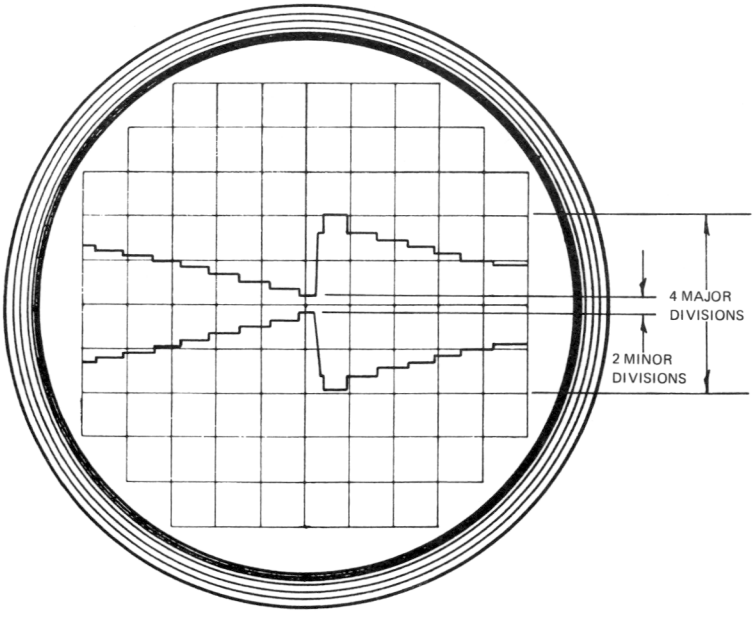


Figure 5-48. Video Modulator 90% Modulation

k. Adjust the white level clipper potentiometer A2R40 slowly cw until the 0.4 cm level (2 small divisions) increases to 0.8 cm (4 small divisions). Slowly adjust the potentiometer ccw until the 0.4 cm level (2 small divisions) is regained and immediately stop. The response should again be as shown in figure 5-48.

The staircase should be symmetrical and there should be ten steps. Clockwise adjustment of the VIDEO MODULATION control (A2R18) on the front panel of the video modulator will only decrease the number of steps with the 0.4 cm (2 small divisions) level remaining constant (figure 5-49).

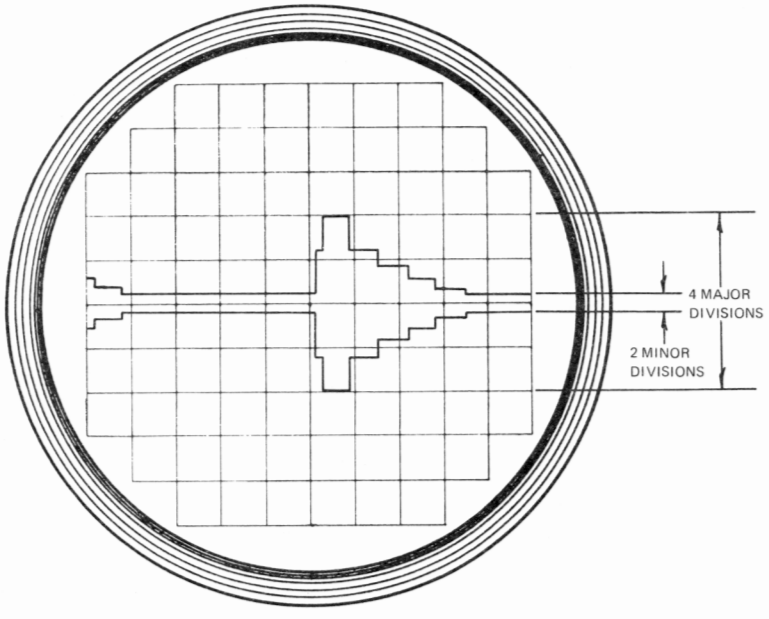


Figure 5-49. Video Modulator Proper White Level Clipper Operation

l. Adjust A2C10 for minimum capacitance.

m. Wax the oscillator coil A2L2 and install the bottom cover (large cover) on the video modulator module. This completes preliminary adjustment and operation verification of the video modulator.

5.10 PHASE EQUALIZER (A1)

5.10.1 PRELIMINARY

a. Perform the following with the POWER ON switch in the OFF position:

1. Remove the phase equalizer (A2) and video modulator (A2) modules.
2. Remove both side covers from the phase equalizer module.
3. Connect a BNC connector through a short piece of Buss wire to the junction of A1L7 and A1C9, pin 3 of the phase equalizer. A connector similar to figure 5-14 can be used by replacing the capacitor with Buss wire.

CAUTION

Do not tune A1L1, A1L2, A1L3, or A1L4. These coils are factory selected and should be replaced if considered defective.

5.10.2 PERFORMANCE CHECK

The phase equalizer module (A1) is an all-pass network comprised of factory selected components. Because of these selected components, alignment is eliminated and checkout consists simply of passing a multiburst signal through the device or sweep verification of the required response. Both methods are outlined below.

5.10.2.1 Sweep Response

a. Connect a long time constant video detector (figure 5-14) to the sweep setup (figure 5-21), then to the temporary BNC connector installed in the setup procedure.

b. Plug the phase equalizer into the modulator chassis.

c. Connect the RF out cable of the sweep generator to the VIDEO IN connector (J1) on the rear panel of the modulator.

d. Adjust the sweep generator controls to produce a 8 cm horizontal scope display from 0 to 5 MHz.

e. Adjust the sweep generator RF out level for a 4 cm vertical scope display at a scope sensitivity of 0.1 mV/cm.

f. Verify that the phase equalizer response is flat (±1 dB) from 0 to 5 MHz. The response is typically 13 MHz wide with a gain of approximately -0.5 dB (figure 5-50).

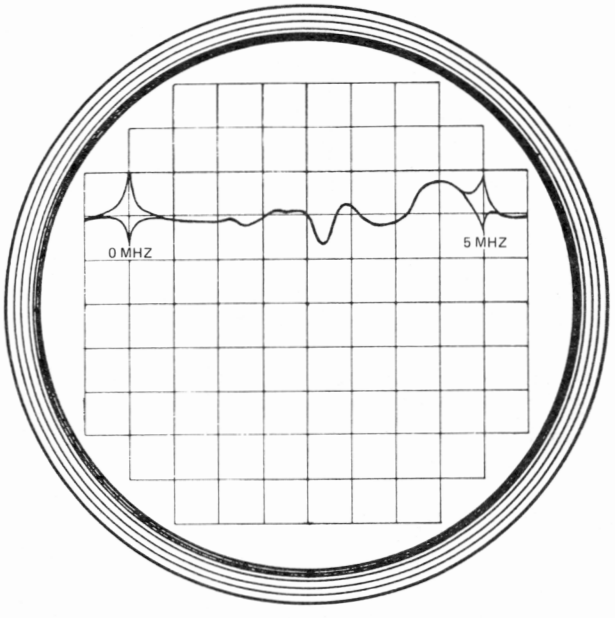


Figure 5-50. Phase Equalizer Sweep Response

g. Unplug the phase equalizer module from the modulator. Remove the video detector from the temporary BNC connector and remove the temporary BNC connector from the phase equalizer PC board. Install both side covers on the module and remove all test equipment connected to the modulator. This completes the sweep response performance test.

5.10.2.2 Multiburst Response

a. Connect a scope to the temporary BNC connector installed in the setup procedure. Use a BNC "TEE" at the scope input and terminate the input in 75 ohms.

b. Plug the phase equalizer into the modulator chassis.

c. Connect the output of a multiburst generator through a 75-ohm attenuator to the VIDEO IN connector (J1) on the rear panel of the modulator.

d. Observe the scope response and verify that the multiburst output from the phase equalizer is flat (±1 dB) over the multiburst spectrum (figure 5-51).

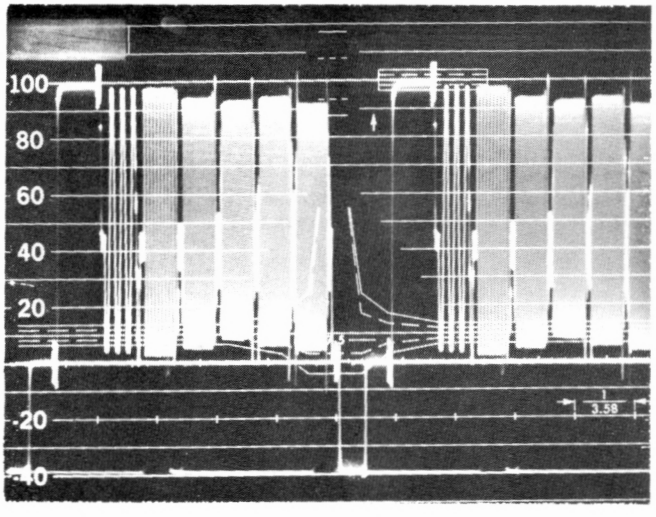


Figure 5-51. Phase Equalizer Multiburst Response

e. Unplug the phase equalizer from the modulator chassis. Remove the scope input cable from the temporary BNC connector and remove the temporary BNC connector from the phase equalizer PC board. Install both side covers on the module and remove all test equipment connected to the modulator. This completes the multiburst response performance test.

5.11 MAIN CHASSIS

5.11.1 PRELIMINARY

a. Perform the following before applying line voltage to the main chassis:

1. Switch the POWER ON switch to the OFF position.
2. Remove all plug-in modules from the main chassis.
3. Remove the small cover on the top rear of the main chassis (allows access to power supply components and chassis wiring).
4. Remove the left side cover (small cover) from the video modulator module (A2).
5. Remove the right side cover (large cover) from the power supply (A3) and meter circuit (A4) module.

CAUTION

The power supply and meter circuit module can now be plugged into the main chassis upside down. Do not do so as this applies AC line voltage directly to the meter circuit module.

6. Mechanically zero the front panel meter.
7. Plug the power supply and meter circuit modules into the main chassis.

b. Visually inspect the main chassis wiring for unsoldered joints and shorted cables and connectors. Check for other obvious mistakes.

5.11.2 OVERALL ALIGNMENT AND CALIBRATION

5.11.2.1 Power Supply

a. Plug the line cord into an AC outlet.

b. Switch the POWER ON switch to the POWER ON position.

c. Measure the (+) and (-) power supply voltages at the provided test points on the modulator rear panel (XA8). These voltages should be ±15V and ±1V, respectively.

d. Switch the POWER ON switch to the OFF position.

e. Plug all modules into the main chassis.

f. Switch the POWER ON switch to the POWER ON position.

g. Recheck the power supply voltages. These should change less than 0.3V from the previous measurement.

5.11.2.2 Meter Zero

a. With the POWER ON switch in the POWER ON position unplug the vestigial sideband filter (A5) and the audio modulator (A6) modules.

b. Switch the meter function switch to the OFF position.

c. Adjust A4R39 (meter electrical zero) until the indicator is at ZERO. A4R39 is the potentiometer closest to the front panel near the bottom of the module.

d. Switch the METER FUNCTION switch to the VIDEO MODULATION position.

e. Adjust A4R26 (video zero) until the indicator is at zero. Potentiometer A4R26 is the potentiometer directly behind A4R39. Return the METER FUNCTION switch to the OFF position.

f. Plug the vestigial sideband filter (A5) and the audio modulator (A6) modules into the main chassis. Initial meter zero adjustments are now complete.

5.11.2.3 Video Modulator

a. Switch the POWER ON switch to the OFF position.

b. Remove the output converter module (A7) from the main chassis.

c. Using a 6-inch jumper cable (figure 5-14) jumper pins "C" and "N" of the output converter chassis connector XA7 (top and center coaxial pins).

d. Remove the video modulator module (A2) from the main chassis.

e. Plug an extender card into the video modulator chassis connector XA2. Plug the video modulator module into the extender card.

f. Adjust the VIDEO CARRIER LEVEL control A5R11 on the front panel of the vestigial sideband filter maximum CW.

g. Switch the POWER ON switch to the POWER ON position.

h. Using a X10 Probe and a wideband scope, look at the output side of A2C20 (pin 17 of the video modulator module). A clean sinewave approximately 1.5V peak-to-peak should be present.

i. Connect a frequency counter to the output side of A2C20. The frequency should be 45.75 MHz ±2.5 kHz. Disconnect the counter.

j. Connect a cable from the COMP VIDEO connector of a Tektronix 146NTSC Signal Generator to the VIDEO IN connector (J1) on the rear panel of the modulator.

k. Adjust the 146NTSC generator to produce a 10 step staircase signal.

l. Connect a Jerrold 727 Field Strength Meter to the RF OUT connector (J9) on the rear panel of the modulator. Tune the field strength meter to 45.75 MHz.

m. Adjust the VIDEO MODULATION control A2R18 on the front panel of the video modulator to MIDRANGE.

n. The output level as seen on the field strength meter should be +46.5 dBmV, ±1 dBmV. If the output level is not +46.5 dBmV, ±1 dBmV, adjust A2R30 (carrier level potentiometer on the video modulator, A2, PC board) until the correct level is obtained.

Note

Adjustment of A2R30 will affect the setting of the white level clipper. Therefore, if A2R30 is adjusted refer to paragraph 5.9 Video Modulator Alignment Procedure and reset the white level clipper.

o. Disconnect the field strength meter from the RF OUT connector (J9) on the modulator rear panel.

p. Connect a wideband scope to the RF OUT connector (J9). Use a BNC "TEE" at the scope input and terminate the input in 75 ohms.

q. Adjust the VIDEO MODULATION control A2R18 on the front panel of the video modulator maximum CW. Observe the scope display and set the scope controls for the response shown in figure 5-49. If this response cannot be obtained refer to paragraph 5.9, Video Modulator Alignment Procedure.

r. Adjust the VIDEO MODULATION control A2R18 on the front panel of the video modulator CCW until the scope display resembles the response shown in figure 5-48. This pattern corresponds to 90% modulation. The staircase should be symmetrical and there should be 10 steps. Clockwise adjustment of the VIDEO MODULATION control A2R18 on the front panel of the video modulator will only decrease the number of steps with the 0.4 cm (2 small divisions) level remaining constant.

s. When the scope display of figure 5-48 is obtained at the correct output level of +46.5 dBmV, ±1 dBmV, and cw adjustment of the VIDEO MODULATION control A2R18 yields the results of step r, proceed to the following:

1. Unplug the video modulator from the extender card.
2. Unplug the extender card from the modulator chassis.
3. Install the cover on the video modulator module.
4. Plug the video modulator module into the modulator chassis.
5. Set the VIDEO MODULATION control A2R18 for the response shown in figure 5-48.

t. The video modulation level as indicated by the meter circuit (A4) is now ready for calibration.

1. Switch the METER FUNCTION switch to the VIDEO MODULATION position.
2. The meter reading should be 90%. If not, adjustment of A4R22 is necessary. This is accomplished in the following manner:
   (a.) Note the meter reading. If greater than 90%, A4R22 must be adjusted in a ccw direction. If less than 90%, A4R22 must be adjusted in a cw direction. Potentiometer A4R22 is the third from the front panel near the bottom of the meter circuit PC board.
   (b.) With the adjustment direction of A4R22 in mind, unplug the vestigial sideband filter module (A5), and with a short adjustment tool slightly turn A4R22 in the appropriate direction.
   (c.) Plug the vestigial sideband filter module into the modulator chassis and again note the meter reading. If it is not 90%, repeat the procedure. Several attempts will be necessary.
3. When the video modulation meter calibration is complete the waveform of figure 5-48 at an output level of +46.5 dBmV, should produce a video modulation meter reading of 90%. Increasing the VIDEO MODULATION control A2R18 on the front panel of the video modulator will only decrease the number of steps as seen on the scope while the meter reading remains constant.

u. Check the output range of the vestigial sideband filter (A5) as follows:

1. Set the VIDEO MODULATION control A2R18 on the front panel of the video modulator for 87.5% modulation as indicated on the meter.
2. Remove the scope cable from the RF OUT connector (J9) on the modulator rear panel and connect a field strength meter to the RF OUT connector (J9). Tune the field strength meter to 45.75 MHz.

3. The field strength meter should indicate levels from less than +30 dBmV to +46.5 dBmV, ±1 dBmV as the VIDEO CARRIER LEVEL control A5R11 is adjusted from one extreme to the other.

Video modulation calibration is now complete.

5.11.2.4 Audio Modulator Calibration

a. Change the 6-inch jumper cable installed in paragraph 5.11.2.3,, step c from pins "C" and "N" to pins "X" and "N" of the output converter chassis connector XA7 (bottom and center coaxial pins).

b. Tune the field strength meter, connected to the RF OUT connector (J9) on the modulator rear panel, to 41.25 MHz.

c. Vary the SOUND CARRIER LEVEL control A6R80 on the front panel of the audio modulator from maximum to minimum. The output level as indicated by the field strength meter should vary from greater than +30 dBmV to less than +15 dBmV. If not, refer to paragraph 5.7 Audio Modulator (A6) Alignment. Set the SOUND CARRIER LEVEL control to maximum CW.

d. Unplug the audio modulator (A6) from the main chassis and plug an extender card into the audio modulator chassis connector XA6.

e. Remove the left side cover (small cover) from the audio modulator module and plug the module into the extender card.

f. Connect a frequency counter through a X1 Probe to the junction of A6R64 (150 ohm) and A6R63 (18 ohm). The counter should indicate a frequency of 4.50 MHz, ±250 Hz. If the frequency is other than 4.50 MHz, ±250 Hz replace the shorting jumper across A6R2 (the output of the AFC error amplifier). The frequency as indicated by the counter should now be 4.50 MHz, ±1 kHz. If the frequency is other than 4.50 MHz, ±1 kHz adjust A6L3 until a reading of 4.50 MHz, ±1 kHz is obtained. Remove the shorting jumper across A6R2. The counter should now indicate a frequency of 4.50 MHz, ±250 Hz. If the frequency is not 4.50 MHz, ±250 Hz adjust A6R25 (4.5 MHz frequency adjust potentiometer) until the frequency is 4.50 MHz, ±250 Hz. An indication of 4.50 MHz, ±250 Hz should occur with A6R25 approximately in the center of its range.

g. Remove the audio modulator from the extender card and install the side cover.

h. Remove the extender card from the modulator chassis and insert the audio modulator module.

i. Connect a 10 kHz signal from the 600-ohm output of a HP-651A Test Oscillator to a 600-ohm balanced to unbalanced transformer (figure 5-14).

j. Connect the 600-ohm balanced output of the transformer to the BALANCED AUDIO INPUT banana jack (J5) on the modulator rear panel.

k. Adjust the output level of the HP-651A for 250 mV rms.

l. Disconnect the field strength meter from the RF OUT connector (J9) on the modulator rear panel and connect a Hewlett-Packard Spectrum Analyzer to the RF OUT connector (J9).

m. Adjust the spectrum analyzer controls as follows:
   1. BANDWIDTH to 3 kHz
   2. SCAN WIDTH to 20 kHz
   3. SCAN TIME PER DIVISION to 5 ms
   4. LOG REF LEVEL to 0 dBm
   5. TUNING STABILIZER to OFF
   6. FREQUENCY to 41.25 MHz

n. Tune the FREQUENCY control on the spectrum analyzer until the carrier frequency (41.25 MHz) of the audio modulator is center on the display scope of the spectrum analyzer (the analyzer is critical to tune with the above settings therefore fine tuning is necessary). When the carrier is centered on the display scope switch the TUNING STABILIZER on to lock the display in place.

o. Adjust the FM DEVIATION control A6R5 on the front panel of the audio modulator cw until the audio carrier nulls. The correct display is shown in figure 5-52. Figure 5-52 is the display of an FM signal with ±25 kHz deviation. When this signal is obtained the FM deviation scale of the meter circuit (A4) can be calibrated.

p. Switch the meter function switch to the FM DEVIATION position.

q. Remove the vestigial sideband filter module (A5) and adjust A4R17 on the meter circuit PC board (A4) for a meter reading of 25 kHz.

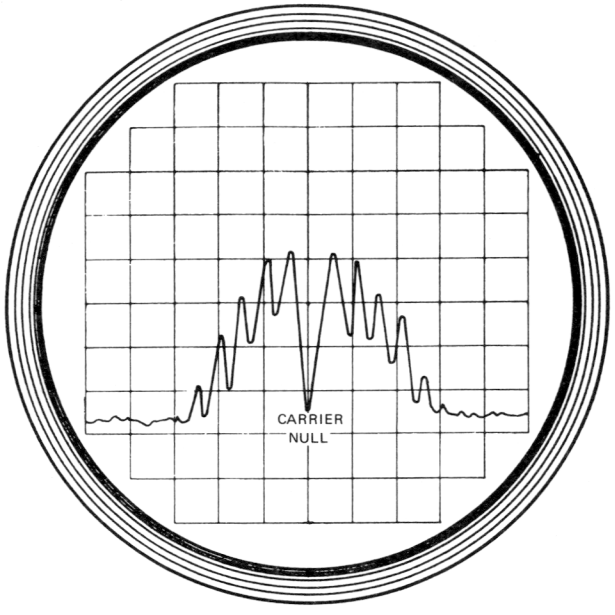


Figure 5-52. 25 kHz FM Deviation Spectrum Analyzer Display

Note

As soon as the vestigial sideband filter is disengaged from its connector the display on the spectrum analyzer will disappear. However, the reading on the meter will not be affected and calibration can be performed with the vestigial sideband filter removed from the modulator chassis.

r. Plug the vestigial sideband filter into the modulator chassis. The spectrum analyzer display should return and the audio carrier should be nulled. The FM deviation meter reading should be 25 kHz. This completes calibration of the audio modulator section.

5.11.2.5 Output Converter

a. Remove the 6-inch jumper cable from the output converter chassis connector XA7.

b. Plug the output converter (A7) into the main chassis.

c. Disconnect the spectrum analyzer from the RF OUT connector (J9) on the rear panel of the modulator. Connect a field strength meter to the RF OUT connector (J9).

d. Tune the field strength meter to the video carrier frequency of the output converter channel.

e. Vary the VIDEO CARRIER LEVEL control A5R11 on the front panel of the vestigial sideband filter module from maximum to minimum. The video carrier level as indicated by the field strength meter should vary from greater than +60 dBmV to less than +45 dBmV. If the maximum output level is less than +60 dBmV check the 45.75 MHz oscillator output level as outlined in paragraph 5.11.2.3, steps 1 through n. If the local oscillator level is sufficient (+46.5 dBmV ±1 dBmV) check the gain of the output converter as outlined in paragraph 5.6. If the minimum output level is greater than +45 dBmV decrease the value of A5R25 (located in the vestigial sideband filter module) from 2.7 kilohm to 1.5 kilohm.

f. Set the VIDEO CARRIER LEVEL control A5R11 on the front panel of the vestigial sideband filter (A5) for a field strength meter reading of +55 dBmV.

g. Tune the field strength meter to the sound carrier frequency of the output converter channel.

h. Vary the SOUND CARRIER LEVEL control A6R80 on the front panel of the audio modulator from maximum to minimum. The sound carrier level as indicated by the field strength meter should vary from greater than +45 dBmV to less than +30 dBmV. If the maximum level is less than +45 dBmV decrease the value of A6R78 (located in the audio modulator module) until a level of +45 dBmV is obtained.

i. Set the SOUND CARRIER LEVEL control A6R80 on the front panel of the audio modulator (A6) for a field strength meter reading of +40 dBmV.

j. Verify that the sound and video carrier levels of the channel of interest are +40 dBmV and +55 dBmV respectively. Disconnect the field strength meter from the modulator.

k. Connect a Hewlett-Packard Spectrum Analyzer through a 50-75 ohm minimum loss pad to the RF OUT connector (J9) on the modulator rear panel. The minimum loss pad should be connected directly to the spectrum analyzer.

l. Adjust the spectrum analyzer controls as follows:
   1. BANDWIDTH to 100 kHz
   2. SCAN WIDTH to 2 MHz
   3. INPUT ATTENUATION to 20 dB
   4. SCAN TIME PER DIVISION to 1 ms
   5. FREQUENCY to channel frequency of the output converter.

m. Switch the BURST switch on the Tektronix 146NTSC Generator to the ON position. The generator should still be connected to the VIDEO IN connector (J1) on the modulator rear panel.

n. The display on the spectrum analyzer should be as shown in figure 5-53.

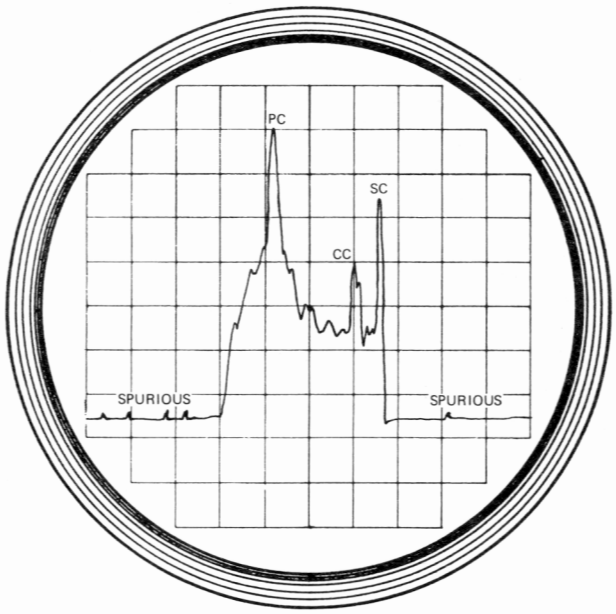


Figure 5-53. Modulator Output Spectrum Analyzer Display

o. Tune the spectrum analyzer to the local oscillator frequency of the output converter (crystal frequency for low bands, twice the crystal frequency for high bands).

p. Unplug the output converter from the main chassis and remove the left side cover (large cover) from the module.

q. Plug the output converter into the modulator and tune the sound and video channel LO traps, if applicable, for minimum LO as seen on the spectrum analyzer.

Note

Refer to the appropriate schematic or alignment procedure to determine if the particular output converter does indeed contain LO traps.

The audio modulator and the vestigial sideband filter can be removed from the modulator chassis to gain access to the output converter LO traps. These modules are not necessary for LO trap adjustment.

r. Plug the audio modulator and the vestigial sideband filter into the modulator chassis.

s. Tune the spectrum analyzer to the channel frequency of the output converter. Verify that all spurious outputs are at least 60 dB below the video carrier of the output converter channel. If a spurious output is less than 60 dB below the channel video carrier recheck the video and sound carrier levels with a field strength meter (refer to paragraph 5.11.2.5, steps c through j. If these levels, +55 dBmV and +40 dBmV, respectively, are correct refer to paragraph 5.6 Output Converter Alignment Procedures.

t. Disconnect the spectrum analyzer from the RF OUT connector (J9) on the modulator rear panel.

5.11.2.6 Final Check and Adjustment

a. Switch the POWER ON switch to the OFF position.

b. Check each plug-in module for side covers, install all that are missing.

c. Replace the small cover on the top rear of the main chassis.

d. Plug all modules into the main chassis and switch the POWER ON switch to the POWER ON position.

e. Place the METER FUNCTION switch in the OFF position. The meter should indicate zero.

f. Place the METER FUNCTION switch in the VIDEO MODULATION position. Disengage the vestigial sideband filter; the meter should again indicate zero.

g. Re-engage the vestigial sideband filter; the meter should read 87.5% modulation. Advance the VIDEO MODULATION control A2R18 on the front panel of the video modulator. The meter should read no greater than 87.5% modulation even with the VIDEO MODULATION control A2R18 maximum CW. Return the control to its proper position.

h. Switch the METER FUNCTION switch to the FM DEVIATION position. The HP-651A should still be connected to the rear panel AUDIO INPUT jacks (J5) through the 600-ohm balanced transformer. Rotate the FM DEVIATION control A6R5 on the front panel of the audio modulator and note the meter reading. The meter indicator should start from zero at the maximum ccw position of the FM DEVIATION control A6R5 and should increase, going off scale at the maximum cw position of the control. Set the FM DEVIATION control A6R5 for a meter reading of 25 kHz.

i. Connect a TV set through a 40-dB pad to the RF OUT connector (J9) on the rear panel of the modulator. Tune the TV set to the channel of the modulator output converter. Set the Tektronix 146 Generator controls to produce the EIA color bars and fine tune the TV set for the best picture. Examine the TV set display for beats or other irregularities. Increase the volume control on the TV set; the 10 kHz audio signal should be audible.

j. Place a shorting jumper (Buss wire) between the pins labeled RELAY and COMM of test point connector XA8 on the rear panel of the modulator. The display on the TV set should disappear. Remove the shorting jumper; the TV set display should return. Disconnect all test equipment from the modulator. Checkout and calibration are now complete.

SECTION 6
TROUBLESHOOTING

6.1 GENERAL

This section contains information essential to troubleshooting and repair of the Model 6300 and 6301 Modulators. Figure 6-1 relates to signal flow for all options of the modulators, and figure 6-2 relates to signal flow for the purpose of isolating defective modules. Schematic diagrams are included in section 8 showing component values and normal operating voltages.

6.2 VOLTAGES

The operating voltages indicated on the schematics were recorded with no signal applied. However, before the input signal was removed the operating controls were set as follows:

Video Modulation	87.5%
Meter Function Switch	OFF Position
Video Carrier Level	+55 dBmV OUT
Sound Carrier Level	+40 dBmV OUT
FM Deviation (Model 6300 only)	25 kHz

All measurements were taken using chassis ground as a reference point and an AC line voltage of 115 volts. Normal voltage variations due to component tolerances and transistor inconsistancies are ±20%. Also note that the power supply voltages are fixed and are subject to ±1V variations between power supply modules. Also, the voltages recorded adjacent to potentiometer controls should be used only as relative indicators of circuit operation.

6.3 TROUBLESHOOTING

Symptoms of malfunction and systematic troubleshooting aids are listed in the Module Isolation Guide, Table 6-1. Only those discrepancies which actually occur within the modulators are listed. Therefore, to avoid erroneous conclusions make sure the conditions specified in paragraph 6.3.1, 6.3.2 and 6.3.3 exist before proceeding to Table 6-1.

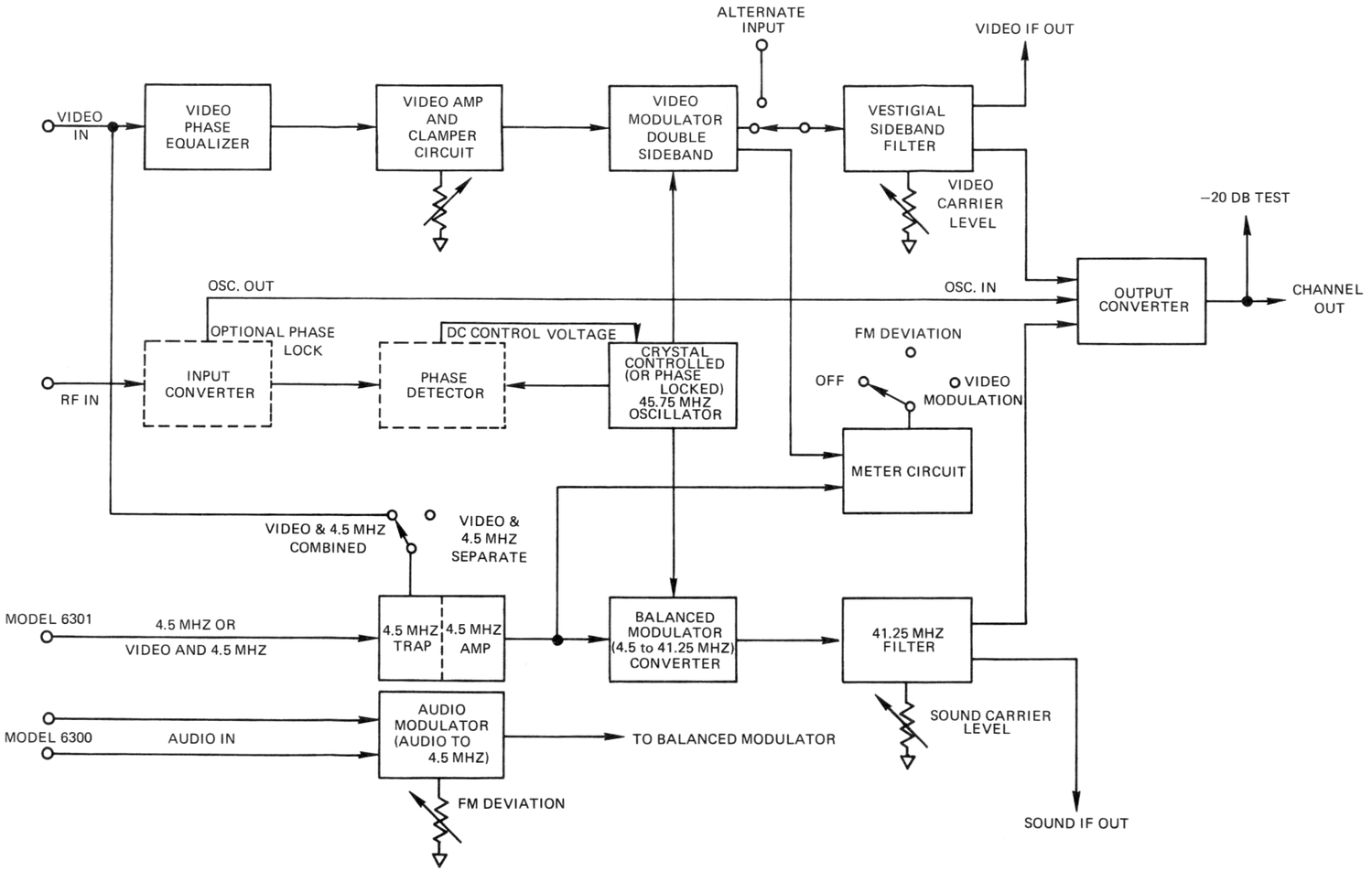


Figure 6-1. Model 6300 and 6301 Modulators Block Diagram (Signal Flow)

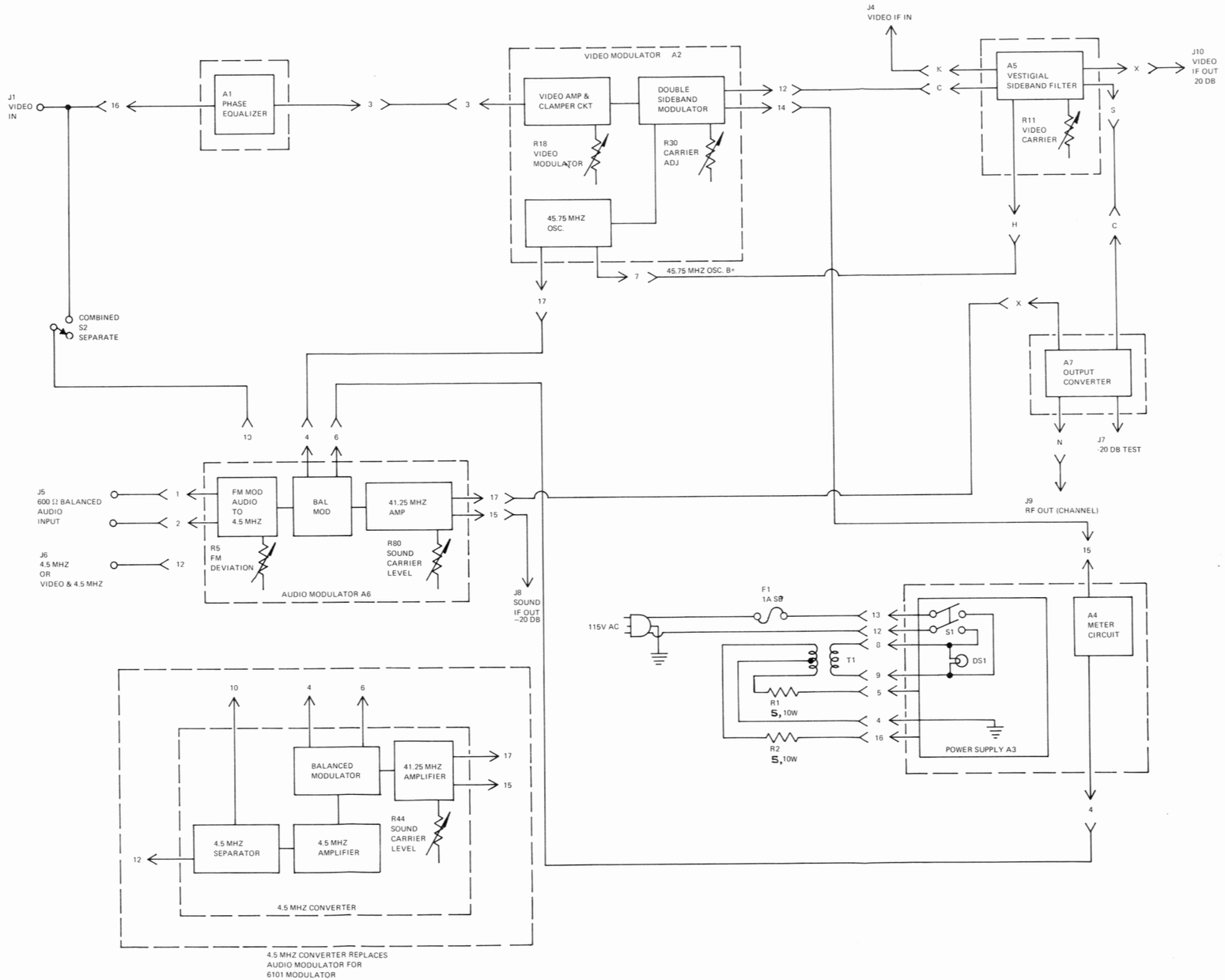


Figure 6-2. Model 6300 and 6301 Modulators Block Diagram (Troubleshooting)

6.3.1 INTERFACE

a. The modulator is properly interfaced for its particular application.

b. The interconnecting cables are free from shorts or opens.

c. The combined-separate switch on the modulator rear panel is in the proper position (Model 6301 only).

6.3.2 SIGNALS

a. The proper signal levels are available.

b. The input signals are free from distortion.

6.3.3 MODULATOR

a. The modulator is plugged into 115V AC.

b. Voltage of 115V AC is present at the source into which the modulator is plugged.

c. The modulator line fuse (F1) is not defective.

d. The modules are plugged in properly.

e. The appropriate output converter, sound modulator (Model 6300 only), or 4.5 MHz Converter (Model 6301 only) is installed.

f. The module front panel controls are adjusted for proper operation.

6.3.4 USE OF THE MODULE ISOLATION GUIDE

The module isolation guide (table 6-1) is divided into three columns which are labeled: Symptoms, Module Isolation, and Reference. These columns are horizontally related, left to right, and should be used as follows:

a. To find the symptoms in the first column which describe the existing condition.

b. To isolate the defective module by the procedures given in the second column.

c. To locate the troubleshooting procedures for a particular module according to the reference given in the third column.

The symptoms "no sound" and "no video" refer to those symptoms which would be observed on a standard TV receiver. The meter indications referred to are those indications displayed by the modulator front panel meter. Before concluding that a module is defective, check the modulator chassis connector voltages and wiring for that particular module. Refer to figure 6-2 to simplify module isolation. This block diagram indicates both sound and video signal paths through the modulator in addition to level controls and auxiliary input and output signal paths.

TABLE 6-1. MODULE ISOLATION GUIDE

Symptoms	Module Isolation	Reference
No sound or video. Meter does not indicate on any scale.	Power Supply - The neon lamp power indicator should be lit. Check for B+ and B- voltages at the modulator rear panel test point connector. Failure of the above indicators points to a defective power supply module.	Refer to paragraph 6.3.6.
	Video Modulator - Monitor the VIDEO IF OUT connector (J10) on the modulator rear panel with a field strength meter. The 45.75 MHz output level should vary from approximately +5 dBmV to +25 dBmV as the VIDEO CARRIER LEVEL control on the front panel of the vestigial sideband filter is varied from maximum CCW to maximum CW. Check the B+ voltage on pins 5 and 7 of the video modulator chassis connector XA2 if the video output level is not present. The video modulator is defective if B+ is present at both pins. If B+ is not present at pin 7 the vestigial sideband filter may be defective.	Refer to paragraph 6.3.10.

TABLE 6-1. MODULE ISOLATION GUIDE-continued

Symptoms	Module Isolation	Reference
	Vestigial Sideband Filter - Check continuity between pin 7 of the video modulator chassis connector XA2 and pin H of the vestigial sideband filter chassis connector XA4. Measure B+ at pin A of the vestigial sideband filter chassis connector XA4 if continuity exists. The vestigial sideband filter module is defective if B+ is present at pin A.	Refer to paragraph 6.3.7.
No sound or video. Meter indicates proper levels.	Output Converter - Monitor the SOUND IF OUT connector (J9) on the modulator rear panel with a field strength meter. Vary the SOUND LEVEL CONTROL on the front panel of the audio modulator (Model 6300), or the 4.5 MHz Converter (Model 6301). The 41.25 MHz output level should vary approximately from -10 dBmV to +10 dBmV. Monitor the VIDEO IF OUT connector (J10) on the modulator rear panel. Vary the VIDEO CARRIER LEVEL control on the front panel of the vestigial sideband filter. The 45.75 MHz output level should vary approximately from +5 dBmV to +25 dBmV. The output converter is defective if sound and video levels are present.	Refer to paragraph 6.3.12.
No video, sound OK. Meter indicates proper levels.	Vestigial Sideband Filter - Monitor the VIDEO IF OUT connector (J10) on the rear panel of the modulator with a field strength meter. The 45.75 MHz output level should vary approximately from +5 dBmV to +25 dBmV as the VIDEO CARRIER LEVEL on the front panel of the vestigial sideband filter is varied from maximum CCW to maximum CW.	Refer to paragraph 6.3.7.

TABLE 6-1. MODULE ISOLATION GUIDE-continued

Symptoms	Module Isolation	Reference
	The vestigial sideband filter is defective if the video IF level is not present. Output Converter - The output converter is defective if the 45.75 MHz video IF level is present.	Refer to paragraph 6.3.12.
No video, sound OK. Meter does not indicate in VIDEO MODULATION position.	Video Modulator - Video modulator is defective.	Refer to paragraph 6.3.10.
No sound, video OK. Meter indicates proper FM deviation and video modulation levels.	Audio Modulator (Model 6300 and 4.5 MHz Converter Model 6301) - Monitor the SOUND IF OUT connector (J8) on the modulator rear panel with a field strength meter. The 41.25 MHz output level should vary approximately from -10 dBmV to +10 dBmV as the SOUND CARRIER LEVEL control on the front panel of the audio modulator or 4.5 MHz converter is varied from maximum CCW to maximum CW.	Refer to paragraph 6.3.12. Refer to paragraph 6.3.8.
	a. The output converter is defective if the correct 41.25 MHz sound IF level is present.	Refer to paragraph 6.3.12.
	b. Tune the field strength meter (still connected to the SOUND IF OUT connector) to 45.75 MHz if the correct 41.25 MHz sound IF level is not present. The 45.75 MHz level at this point should be approximately -20 dBmV.	Refer to paragraph 6.3.10.

TABLE 6-1. MODULE ISOLATION GUIDE-continued

Symptoms	Module Isolation	Reference
	1. The video modulator is defective if the correct 45.75 MHz level is not present. 2. The audio modulator is defective if the correct 45.75 MHz level is present.	
No sound, video OK. Meter does not indicate proper FM deviation.	Audio Modulator - Audio modulator is defective.	Refer to paragraph 6.3.8.
No meter indication in either position. Video OK, sound OK.	Meter Circuit - Meter circuit is defective.	Refer to paragraph 6.3.11.
Sound distorted, video OK, sound output level OK	Audio Modulator (Model 6300) - Audio modulator is defective. 4.5 MHz Converter (Model 6301) - Input audio is distorted; no modulator malfunction.	Refer to paragraph 6.3.8.
Video distorted, video output level OK, sound OK.	Video Modulator - Connect a shorting jumper between the RELAY COIL and COM pins of the modulator rear panel test point connector. Connect the VIDEO IF OUT connector (J3) on the rear panel of a Model 6100-6101 Signal Processor to the VIDEO IF IN connector (J4) on the rear panel of the modulator. Adjust the VIDEO CARRIER LEVEL control on the vestigial sideband filter front panel maximum CW. Connect a TV set through a 20 dB pad to the modulator RF OUT connector (J9). If no video distortion exists the video modulator is defective.	Refer to paragraph 6.3.10 and 6.3.7.

TABLE 6-1. MODULE ISOLATION GUIDE-continued

Symptoms	Module Isolation	Reference
--	Vestigial Sideband Filter - Remove the shorting jumper and connect the modulator VIDEO IF OUT connector (J10) to the VIDEO IF IN connector (J7) on a Model 6100-6101 Processor. Adjust the processor RF OUT level for +55 dBmV. Connect the RF OUT connector (J6) of the processor through a 40 dB pad to the input of a TV set. The output converter is defective if the video is not distorted.	--

6.3.5 USE OF THE MODULE TROUBLESHOOTING GUIDES

The module troubleshooting guides (tables 6-2, 6-4, 6-6, 6-8, 6-10, 6-12 and 6-15) are presented to establish a basis for troubleshooting a particular module. They represent a logical sequence directed toward the isolation of a single defective component within the module. The troubleshooting guides are used in a manner similar to the Module Isolation Guides, Paragraph 6.3.4. The symptoms "no sound" and "no video" refer to those symptoms which would be observed on a standard TV receiver. To ensure optimum modulator performance after repairs, a table of the minimum calibration checks required for a particular area is presented (see tables 6-3, 6-5, 6-7, 6-9, 6-11, 6-13, 6-14 and 6-16). These minimum calibration tables are to be used as follows:

a. Under the column labeled "Repair Made in this Area," locate the defective component found in a particular module. If the defective component is not listed, select the component electrically located in the area of the malfunction.

b. Determine the minimum calibration steps required for a particular area of malfunction by noting the information given in the columns horizontally across from the defective component. The checkout and calibration procedures in which these steps are listed are indicated directly above the listing of steps. An "X" in any column denotes that the entire section of the checkout procedure is to be checked. In some instances more than one checkout procedure is

involved. If this is the case the particular procedure is listed in the column directly under the section to be performed. Example:

1. In the video modulator Q1 is found defective and replaced. Under the column labeled Repair Made in this Area Q1 is located. The calibration steps to be checked would be paragraphs 5.9.2.1, 5.9.2.2, and steps r, s, t of 5.11.2.3.
2. In the 4.5 MHz Converter Q1 is found defective and replaced. Under the column labeled Repair Made in this Area Q1 is located. The calibration steps to be checked are all steps listed in paragraph 5.8.2.3.
3. In a low band output converter Q1 is found defective and replaced. Under the column labeled Repair Made in this Area Q1 is located. The calibration steps to be checked would be c through g of paragraph 5.6.4.

Note

The first paragraph of each checkout and calibration procedure (5.4-5.11) should be consulted before attempting the particular calibration checks. The modulator setup procedures necessary for alignment and calibration of each module are listed in the first paragraph.

6.3.6 POWER SUPPLY

Power supply troubleshooting is accomplished through voltage and resistance checks. Voltage measurements should be made and compared to those recorded on the schematic. Erroneous voltage measurements along with resistance readings should then be analyzed to determine the faulty component. The self-adjusting nature of the power supply eliminates the necessity of post-repair calibration checks. Therefore, after making the necessary repairs ensure that the proper regulated outputs are present and return the unit to service.

6.3.7 VESTIGIAL SIDEBAND FILTER

Troubleshooting the vestigial sideband filter can be simplified by utilizing the provided test points on the PC board in conjunction with a field strength meter. RF level checks at the test points should indicate the area of malfunction.

If the malfunction occurs in the interstage amplifier voltage and resistance measurements should pinpoint the defective component. However, if a malfunction occurs in either the input or output filter sections troubleshooting must depend on effective utilization of sweep techniques. Possible malfunctions and their symptoms are listed in table 6-2. Also included are the minimum calibration checks (table 6-3) required after repairs are completed.

TABLE 6-2. POWER SUPPLY AND VESTIGIAL SIDEBAND FILTER TROUBLESHOOTING GUIDE

Symptoms	Area Isolation	Defective Component
No Video	Monitor test point J3 on the vestigial sideband filter PC board with a field strength meter. Vary the VIDEO CARRIER LEVEL control on the front panel of the vestigial sideband filter. The 45.75 MHz video IF level should vary from approximately +30 dBmV to +50 dBmV. If the correct level is present at J3 a malfunction exists in the output filter section. If the correct level is not present at J3 monitor test point J2. The 45.75 MHz level should be approximately +30 dBmV. If the correct level is present at J2 a malfunction exists in the interstage amplifier. If the correct level is not present at J2 a malfunction exists in the input circuitry.	Interstage Amplifier Q1, Q2, Q3 Input Circuitry K1.
No video or sound (alternate video IF input only)	Use the above procedure.	Same as above.

TABLE 6-3. VESTIGIAL SIDEBAND FILTER CALIBRATION CHECKS

Repair Made In This Area	Calibration Steps To Be Checked Refer to paragraph 5.5 Vestigial Sideband Filter Checkout				
Ref. Paragraph	5.5.3	5.5.4	5.5.5	5.5.6	5.5.7
Q1, Q2, Q3				X	
K1					X

6.3.8 AUDIO MODULATOR

The audio modulator can be divided into four distinct areas to simplify troubleshooting. These are:

a. Audio amplifier

b. 4.5 MHz oscillator

c. Output stage consisting of the balanced mixer and the 41.25 MHz amplifier.

d. AFC loop consisting of the 4.2 MHz oscillator, the 300 kHz discriminator, the 300 kHz mixer and the AFC error amplifier.

To effectively troubleshoot areas a, b and d, a frequency counter, oscilloscope and audio generator must be available. Isolation of a malfunctioning area can be accomplished by monitoring the sound IF out level, the FM deviation meter indication, and the quality of audio available at the output of the modulator. A malfunction in area a will normally eliminate FM deviation. A malfunction in areas b or c will normally eliminate the 41.25 MHz sound IF output. A malfunction in area d will not noticeably affect the sound IF output level but will produce noticeable degradation in the quality of audio available at the modulator output. Possible malfunctions and their symptoms are listed in table 6-4. Also included are the minimum checks (table 6-5) required after repairs are completed.

TABLE 6-4. AUDIO MODULATOR TROUBLESHOOTING GUIDE

Symptoms	Area Isolation	Defective Component
No sound	Monitor the SOUND IF OUT connector (J8) on the modulator rear panel with a field strength meter. Vary the SOUND CARRIER LEVEL control on the front panel of the audio modulator. As the control is varied from maximum CCW to maximum CW the 41.25 MHz level should vary from approximately -10 dBmV to +10 dBmV. Monitor the modulator front panel meter for FM deviation. The meter should indicate greater than 25 kHz with the FM DEVIATION control set at MIDRANGE. a. If the correct 41.25 MHz sound IF level is present but the meter indicates no deviation, a malfunction exists in the audio amplifier stage.	Audio amp Q1, Q2, Q3 Output stage CR7, Q10 IC2, Q9 4.5 MHz Oscillator Q6, CR6

TABLE 6-4. AUDIO MODULATOR TROUBLESHOOTING GUIDE
continued

Symptoms	Area Isolation	Defective Component
	b. If the correct 41.25 MHz sound IF level is not present and the meter indicates the correct FM deviation, a malfunction exists in the output stage. c. If the correct 41.25 MHz sound IF level is not present and the meter indicates no FM deviation, a malfunction exists in the 4.5 MHz oscillator stage.	
Audio drifts and is distorted	Monitor the SOUND IF OUT connector (J8) on the Model 6300 Modulator rear panel with a field strength meter. Vary the SOUND CARRIER LEVEL control on the front panel of the audio modulator from maximum CCW to maximum CW. The 41.25 MHz sound IF level should vary from approximately -10 dBmV to +10 dBmV. Monitor the modulator front panel meter FM deviation. The meter should indicate greater than 25 kHz with the FM DEVIATION control set at MID-RANGE. a. If the correct sound IF OUT level is present with proper FM deviation meter indication, check the voltage at the junction of A6R2 and A6R3. If the voltage is high (approximately 4V, positive or negative) a malfunction exists in the AFC loop. 1. While monitoring the voltage at the junction of A6R2 and A6R3, short pins 2 and 3 of A6IC1 together. If the voltage changes, A6IC1 is working properly and the malfunction exists in the remaining circuitry of the AFC loop. 2. Oscillator and mixer operation can be verified with a scope and a frequency counter; however, discriminator operation must be verified as called out in paragraph 5.7.5, Audio Modulator Checkout.	AFC Loop IC1, Q8 Q4, Q5

TABLE 6-5. AUDIO MODULATOR CALIBRATION CHECKS

Repair Made In This Area	Calibration Steps To Be Checked Refer to paragraph 5.7, Audio Modulator Checkout							
Ref. Paragraph	5.7.3	5.7.4	5.7.5	5.7.6	5.7.7	5.7.8	5.7.10	5.7.11
Q1, Q2, Q3							X	
CR7, Q9		X						
Q4, Q5			X			X		
Q8				X		X		
Q6					X	X		
IC1						X		
Q10, IC2	X							X
Q7								

6.3.9 4.5 MHZ CONVERTER

The 4.5 MHz Converter can be divided into three distinct areas to simplify trouble-shooting. These are:

a. 4.5 MHz Separator

b. 4.5 MHz Amplifier consisting of Q2, IC1 and Q4

c. The output stage consisting of the balanced mixer and the 41.25 MHz amplifier.

Isolation of a malfunction can be accomplished by monitoring the 41.25 MHz sound IF OUT level, the FM DEVIATION meter indication and the VIDEO MODULATION meter indication. Voltage and resistance measurements should pinpoint the faulty component when the area of malfunction is isolated. Possible malfunctions and their symptoms are listed in table 6-6. Also included are the minimum calibration checks (table 6-7) required after repairs are completed.

TABLE 6-6. 4.5 MHZ CONVERTER TROUBLESHOOTING GUIDE

Symptoms	Area Isolation	Defective Component
No sound, video OK.	Monitor the SOUND IF OUT connector (J8) on the modulator rear panel with a field strength meter. Vary the SOUND CARRIER LEVEL control on the front panel of the 4.5 MHz Converter from maximum CCW to maximum CW. The 41.25 MHz sound IF level should vary from approximately -10 dBmV to +10 dBmV. Monitor the FM DEVIATION indication on the front panel meter. The peaks of FM DEVIATION as indicated on the meter should be greater than 15 kHz. a. If the correct FM DEVIATION meter indication exists but the correct 41.25 MHz sound IF level is not present, the output stage is defective. b. If the correct FM DEVIATION is not indicated and the 41.25 MHz sound IF level is not present, the 4.5 MHz amplifier is defective.	Output Stage CR1, Q5, IC2 4.5 MHz Amp. Q2, IC1, Q4
No sound, no video.	4.5 MHz Separator	Q1
No video, sound OK	4.5 MHz Separator	Q3

TABLE 6-7. 4.5 MHZ CONVERTER CALIBRATION CHECKS

Repair Made In This Area	Calibration Steps To Be Checked. Refer to paragraph 5.8, 4.5 MHz Converter Checkout			
Ref. Paragraph	5.8.2.1	5.8.2.2	5.8.2.3	5.8.2.4
Q1, Q2, Q3, IC1			X	
Q4, CR1		X		
Q5				X
IC2	X			

6.3.10 VIDEO MODULATOR

Discrepancies in the video modulator can be effectively isolated through the use of signal tracing techniques. Signals at various points in the video channel are shown on the schematic diagram. In situations where signal tracing cannot be utilized, effective troubleshooting can be accomplished through cautious evaluation of voltage and resistance readings. Possible malfunctions and their symptoms are listed in table 6-8. Also included are the minimum calibration checks (table 6-9) required after repairs are completed.

TABLE 6-8. VIDEO MODULATOR TROUBLESHOOTING GUIDE

Symptoms	Area Isolation	Defective Component
No video, no sound	45.75 MHz Oscillator	Q1, Y1
No sound, video OK	45.75 MHz Oscillator Buffer	Q5
No video, sound OK	With a field strength meter monitor the "VIDEO IF OUT" connector (J10) on the modulator rear panel. The 45.75 MHz level should vary approximately from +5 dBmV to +25 dBmV as the "VIDEO CARRIER LEVEL" control on the front panel of the vestigial sideband filter is varied from maximum CCW to maximum CW. If the correct 45.75 MHz video IF level is present a malfunction exists in the input video channel. If the correct 45.75 MHz video IF level is not present a malfunction exists in the video IF output channel.	Input video channel Q2, Q4, Q6 Q7, Q9 Video IF output channel Q3, Q8

TABLE 6-9. VIDEO MODULATOR CALIBRATION CHECKS

Repair Made In This Area	Calibration Steps To Be Checked Refer to paragraphs 5.9, Video Modulator Checkout, and 5.11, 6300 Main Chassis Checkout and Calibration		
Ref. Paragraph	5.9	5.9	5.11
Q1, Y1	5.9.2.1	5.9.2.2	5.11.2.3 (r, s, t)
Q3, Q7		5.9.2.2	5.11.2.3 (r, s, t)
Q2, Q4, Q5, Q6, Q8, Q9		5.9.2.2	

6.3.11 METER CIRCUIT

Meter circuit troubleshooting can be simplified through the use of the meter itself. A meter circuit malfunction can be isolated to the video, sound, or meter driver circuitry of the meter circuit module by noting the meter indications and monitoring the sound and video outputs of the modulator. Once the area of malfunction is isolated, voltage and resistance measurements should indicate the faulty component. Possible malfunctions and their symptoms are listed in table 6-10. Also included are the minimum calibration checks (table 6-11) required after repairs are completed.

TABLE 6-10. METER CIRCUIT TROUBLESHOOTING GUIDE

Symptoms	Area Isolation	Defective Component
No meter indication - FM DEVIATION or VIDEO MODULATION position	Meter Driver Circuitry	Q4
Meter pegged - all positions	Meter Driver Circuitry	Q4, Q5, Q6
No meter indication in FM DEVIATION position - video modulation position OK	Sound Channel	IC1, Q2

TABLE 6-10. METER CIRCUIT TROUBLESHOOTING GUIDE-continued

Symptoms	Area Isolation	Defective Component
No meter indciation in VIDEO MODULATION position - FM DEVIATION position OK	Video Channel	Q1, Q3
Meter erratic in all positions	Meter Driver Circuitry	Q5

TABLE 6-11. METER CIRCUIT CALIBRATION CHECKS

Repair Made In This Area	Calibration Steps To Be Checked. Refer to paragraphs 5.4, Power Supply and Meter Circuit Checkout, and 5.11, 6300 Main Chassis Checkout and Calibration			
Ref. Paragraph	5.4.2	5.4.2.2	5.11.2.3	5.11.2.4
Q1, Q3			5.11.2.3 (s, t)	
Q2, IC1				5.11.2.4 (i-y)
Q4, Q5, Q6		5.9	5.11.2.3 (s, t)	5.11.2.4 (i-y)

6.3.12 OUTPUT CONVERTER

The procedure for troubleshooting the output converter depends on the model of the converter in question, i.e., midband or standard channel. The necessity for variation results because the sound and video signals are processed differently in the two converter models. Stage isolation in the standard channel converter is simplified because the sound and video signals are processed separately. Due to this arrangement the area of malfunction can be easily recognized. On the other hand, the midband output converter processes the sound and video signals in a single channel. This complicates stage isolation in that a single defective stage eliminates the total channel output. Possible malfunctions and their symptoms are listed in tables 6-12 and 6-15. Also included are the minimum calibration checks

(tables 6-13, 6-14 and 6-16) required after repairs are completed.

TABLE 6-12. STANDARD CHANNEL CONVERTER TROUBLESHOOTING GUIDE

Symptoms	Area Isolation	Defective Component
No video, sound OK	Video Channel	Low Band (2-6) DBM2, Q4, Q6
		High Band (7-13) Q3, Q7, Q9
No sound, video OK	Sound Channel	Low Band (2-6) DBM1, Q3 Q5
		High Band (7-13) Q4, Q6, Q8
No sound, no video	Local Oscillator	Low Band (2-6) Q1, Q2, Y1
		High Band (7-13) Q1, Q2, Q5, Y1

TABLE 6-13. OUTPUT CONVERTER (LOW-BAND) CALIBRATION CHECKS

Repair Made In This Area	Calibration Steps To Be Checked Refer to paragraphs 5.6 and 5.6.4, Output Converter Checkout		
Ref. Paragraph	5.6.4.1	5.6.4.2	5.6.4.3
Y1, Q1, Q2			(c-g)
DBM2, Q4			(h-i)
DBM1, Q3			(j)
Q5	(p, q, r)		
Q6	X		

TABLE 6-14. OUTPUT CONVERTER (HIGH-BAND) CALIBRATION CHECKS

Repair Made In This Area	Calibration Steps To Be Checked Refer to paragraphs 5.6 and 5.6.6, Output Converter Checkout		
Ref. Paragraph	5.6.6.1	5.6.6.2	5.6.6.3
Y1, Q1			(c-e)
Q2, Q5			(f)
Q3, Q7			(i)
Q4, Q6			(j)
Q8			(r)
Q9			(a-r)

TABLE 6-15. MID-BAND CONVERTER TROUBLESHOOTING GUIDE

Symptoms	Area Isolation	Defective Component
No sound, no video	With a field strength meter monitor TP4 on the converter PC board. The local oscillator (2X XTAL FREQ) level should be approximately +30 dBmV. If the correct LO level is present a malfunction exists in the video channel. If the correct level is not present a malfunction exists in the local oscillator circuitry.	Video channel DBM1, Q1, Q3, Q5 Local Oscillator Y1, Q2, Q4

TABLE 6-16. OUTPUT CONVERTER (MID-BAND) CALIBRATION CHECKS

Repair Made In This Area	Calibration Steps To Be Checked Refer to 5.6 and 5.6.5, Output Converter Checkout					
Ref. Paragraph	5.6.5.2	5.6.5.3	5.6.5.4	5.6.5.5	5.6.5.6	5.6.5.7
DBM1					X	X
Q1, Q5, Q3					X	
Q2, Q4		X				X
Y1		X				

SECTION 7
PARTS LISTS

7.1 GENERAL

The parts list in this section contains a description of all electrical components. For information on parts not listed here, consult the factory or your local Scientific-Atlanta representative.

7.2 EXPLANATION OF COLUMN HEADINGS

Comp Desig: This is the component designation that appears on the schematic diagram for that unit.

S-A Part No: The Scientific-Atlanta part number is listed in this column.

Description: A brief electrical or mechanical description is given in this column.

FSCM: Federal Supply Code for Manufacturers' codes are entered here. The code numbers are from the Federal Supply Code for Manufacturers' Cataloging Handbooks H4-1 (Name to Code) and H4-2 (Code to Name) effective on the publication date of this manual. Alphabetical codes have been arbitrarily assigned to suppliers in order to identify those not appearing in the H4 handbooks. Identifying codes are cross-referenced (code to name) at the end of this section.

Mfr. Part No: The number assigned to the part by the manufacturer is listed in this column.

7.3 ORDERING PARTS

When ordering parts from Scientific-Atlanta, always include the S-A part number, part description, unit serial number, unit name, subassembly name, part manufacturer, and manufacturer's part number.

PARTS LIST

MODEL 6300 PHASE EQUALIZER

A1P1

COMP DESIG	S-A PART NUMBER	DESCRIPTION	FSCM	MFR PART NO.
C01	81113	CAPACITR 468 PF 100V SILVER MICA 5%	84171	DM-15
C02	81118	CAPACITR .00598 MF 100V SILVER MICA 5%	84171	DM-19
C03	81113	CAPACITR 468 PF 100V SILVER MICA 5%	84171	DM-15
C04	81117	CAPACITR .0023 MF 100V SILVER MICA 5%	84171	DM-19
C05	81115	CAPACITR 935 PF 100V SILVER MICA 5%	84171	DM-15
C06	81115	CAPACITR 935 PF 100V SILVER MICA 5%	84171	DM-15
C07	81117	CAPACITR .0023 MF 100V SILVER MICA 5%	84171	DM-19
C08	81114	CAPACITR 831 PF 100V SILVER MICA 5%	84171	DM-15
C09	81114	CAPACITR 831 PF 100V SILVER MICA 5%	84171	DM-15
C10	81116	CAPACITR .001709 MF 100V SILVER MICA 5%	84171	DM-19
C11	78600	NOT ASSIGNED		
C12	78600	NOT ASSIGNED		
L01	81094	INDUCTOR 5.6 UH MUTUAL L1 & L2 EA 11 UH	02113	R4259
L02	81093	INDUCTOR .60 UH MUTUAL L1 & L2 EA 5.7 UH	02113	R4260
L03	81122	INDUCTOR 5.82 UH 1%	09021	10168-27
L04	81120	INDUCTOR 2.63 UH 1%	09021	10152-58
L05	81121	INDUCTOR 4.68 UH 1%	09021	10152-59
L06	81119	INDUCTOR 2.29 UH 1%	09021	10152-57

PARTS LIST

MODEL 6300 VIDEO MODULATOR

A2P1

COMP DESIG	S-A PART NUMBER	DESCRIPTION	FSCM	MFR PART NO.
CR01	80004	DIODE 5082-2805 DET UHF SCHOTTKY QUAD	28480	HPA-5082-2805
CR02	80004	DIODE 5082-2805 DET UHF SCHOTTKY QUAD	28480	HPA-5082-2805
CR03	80004	DIODE 5082-2805 DET UHF SCHOTTKY QUAD	28480	HPA-5082-2805
CR04	80004	DIODE 5082-2805 DET UHF SCHOTTKY QUAD	28480	HPA-5082-2805
CR05	71142	DIODE 1N4154 SIL 25V 150MA	80368	1N4154
CR06	77488	DIODE 1N4737A SI ZEN 7.5V 5% 1w	80211	1N4737A
CR07	71142	DIODE 1N4154 SIL 25V 150MA	80368	1N4154
CR08	71142	DIODE 1N4154 SIL 25V 150MA	80368	1N4154
CR09	78600	NOT ASSIGNED		
CR10	78600	NOT ASSIGNED		
C01	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C02	81117	CAPACITR .0023 MF 100V SILVER MICA 5%	84171	DM-19
C03	81113	CAPACITR 468 PF 100V SILVER MICA 5%	84171	DM-15
C04	70651	CAPACITR 25 MF 25V	80183	500D256G025CB7
C05	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C06	70656	CAPACITR 47 MF 20V	80183	150D476X0020RL
C07	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C08	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C09	70470	CAPACITR 10 PF 500V SILVER MICA 5%	14655	CD15CD100J03
C10	79143	CAPACITR 2-8 PF MIN CER DISC PC MT	72982	538-011 A 2-8
C11	70517	CAPACITR 100 PF 500V SILVER MICA 5%	14655	CD15FD101J03
C12	70487	CAPACITR 27 PF 500V SILVER MICA 5%	14655	CD15ED270J03
C13	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C14	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C15	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C16	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C17	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C18	81095	CAPACITR 3.3 MF 50V CER SQUARE 20%	72982	8151-050-651-335M
C19	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C20	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C21	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C22	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C23	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C24	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C25	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C26	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C27	78600	NOT ASSIGNED		
C28	78600	NOT ASSIGNED		
L01	81093	INDUCTOR .60 UH MUTUAL L1 & L2 EA 5.7 UH	02113	R4260
L02	105198	INDUCTOR 15.75 TURNS		
L03	77670	INDUCTOR 33 UH SUBMIN UNSHLD MOLDED 10%	72259	DD-33
L04	80132	INDUCTOR 1.0 UH UNSHLD EPOXY COAT 10%	09021	4426-6K
L05	78600	NOT ASSIGNED		
L06	78600	NOT ASSIGNED		
Q01	77531	TRANSSTR 2N4995 NPN SIL		2N4995
Q02	77147	TRANSSTR 2N3947 NPN SIL	80211	2N3947
Q03	78197	TRANSSTR 2N3866 NPN SIL	79089	2N3866
Q04	77147	TRANSSTR 2N3947 NPN SIL	80211	2N3947
Q05	78197	TRANSSTR 2N3866 NPN SIL	79089	2N3866
Q06	77148	TRANSSTR 2N3251 PNP SIL	80211	2N3251
Q07	77147	TRANSSTR 2N3947 NPN SIL	80211	2N3947
Q08	78197	TRANSSTR 2N3866 NPN SIL	79089	2N3866
Q09	77147	TRANSSTR 2N3947 NPN SIL	80211	2N3947
Q10	78600	NOT ASSIGNED		
Q11	78600	NOT ASSIGNED		
R01	72019	RESISTOR 8.2K OHM 1/4W 10% COMP	01121	RCR07G822KS
R02	71979	RESISTOR 2.2K OHM 1W 10% COMP	01121	RCR32G222KS
R03				
R04	71853	RESISTOR 27 OHM 1/4W 10% COMP	01121	RCR07G270KS
R05	72026	RESISTOR 10K OHM 1/4W 10% COMP	01121	RCR07G103KS
R06	71926	RESISTOR 470 OHM 1/4W 10% COMP	01121	RCR07G471KS
R07	72093	RESISTOR 68K OHM 1/4W 10% COMP	01121	RCR07G683KS

PARTS LIST

MODEL 6300 VIDEO MODULATOR-continued

A2P1

COMP DESIG	S-A PART NUMBER	DESCRIPTION	FSCM	MFR PART NO.
R08	71977	RESISTOR 2.2K OHM 1/4W 10% COMP	01121	RCR07G222KS
R09	71926	RESISTOR 470 OHM 1/4W 10% COMP	01121	RCR07G471KS
R10	71989	RESISTOR 3.3K OHM 1/4W 10% COMP	01121	RCR07G332KS
R11	71931	RESISTOR 560 OHM 1/4W 10% COMP	01121	RCR07G561KS
R12	72014	RESISTOR 6.8K OHM 1/4W 10% COMP	01121	RCR07G682KS
R13	71993	RESISTOR 3.9K OHM 1/4W 10% COMP	01121	RCR07G392KS
R14	71887	RESISTOR 100 OHM 1/4W 10% COMP	01121	RCR07G101KS
R15	71853	RESISTOR 27 OHM 1/4W 10% COMP	01121	RCR07G270KS
R16	71876	RESISTOR 68 OHM 1/4W 10% COMP	01121	RCR07G680KS
R17	71993	RESISTOR 3.9K OHM 1/4W 10% COMP	01121	RCR07G392KS
R18	81111	POT 1K OHM 1/2W COMP PNL MT 7/8 SHFT	01121	RV6NAYSD102A
R19	72026	RESISTOR 10K OHM 1/4W 10% COMP	01121	RCR07G103KS
R20	77524	RESISTOR 75 OHM 1/4W 5% COMP	01121	RCR07G750JS
R21	76723	RESISTOR 39 OHM 1/4W 10% COMP	01121	RCR07G390KS
R22	71876	RESISTOR 68 OHM 1/4W 10% COMP	01121	RCR07G680KS
R23	71887	RESISTOR 100 OHM 1/4W 10% COMP	01121	RCR07G101KS
R24	71887	RESISTOR 100 OHM 1/4W 10% COMP	01121	RCR07G101KS
R25	76723	RESISTOR 39 OHM 1/4W 10% COMP	01121	RCR07G390KS
R26	71951	RESISTOR 1.0K OHM 1/4W 10% COMP	01121	RCR07G102KS
R27	72182	RESISTOR 820K OHM 1/4W 10% COMP	01121	RCR07G824KS
R28	71897	RESISTOR 150 OHM 1/4W 10% COMP	01121	RCR07G151KS
R29	71897	RESISTOR 150 OHM 1/4W 10% COMP	01121	RCR07G151KS
R30	78724	POT 1K OHM 1/2W CERMET PC MT 3/8 DIA	01121	SV1021
R31	72019	RESISTOR 8.2K OHM 1/4W 10% COMP	01121	RCR07G822KS
R32	76723	RESISTOR 39 OHM 1/4W 10% COMP	01121	RCR07G390KS
R33	71982	RESISTOR 2.7K OHM 1/4W 10% COMP	01121	RCR07G272KS
R34	71862	RESISTOR 47 OHM 1/4W 10% COMP	01121	RCR07G470KS
R35	71938	RESISTOR 680 OHM 1/4W 10% COMP	01121	RCR07G621KS
R36	71876	RESISTOR 68 OHM 1/4W 10% COMP	01121	RCR07G680KS
R37	77524	RESISTOR 75 OHM 1/4W 5% COMP	01121	RCR07G750JS
R38	71927	RESISTOR 470 OHM 1/2W 10% COMP	01121	RCR20G471KS
R39	71941	RESISTOR 820 OHM 1/4W 10% COMP	01121	RCR07G821KS
R40	78724	POT 1K OHM 1/2W CERMET PC MT 3/8 DIA	01121	SV1021
R41	71907	RESISTOR 220 OHM 1/4W 10% COMP	01121	RCR07G221KS
R42	71836	RESISTOR 10 OHM 1/4W 10% COMP	01121	RCR07G100KS
R43	71887	RESISTOR 100 OHM 1/4W 10% COMP	01121	RCR07G101KS
R44	78600	NOT ASSIGNED		
R45	78600	NOT ASSIGNED		
T01	108840	TOROID 2 TURNS PRI 6 TURNS SEC		
T02	78600	NOT ASSIGNED		
T03	78600	NOT ASSIGNED		
Y01	77521	CRYSTAL 45.75MHZ PLUG IN HC6V CASE	27073	HC6/U HOLDER
Y02	78600	NOT ASSIGNED		

PARTS LIST

MODEL 6300 POWER SUPPLY

A3

COMP DESIG	S-A PART NUMBER	DESCRIPTION	FSCM	MFR PART NO.
CR1	80153	RECTIFIR ASSY 50PRV 1.5A	80211	MDA942-1
CR2	71142	DIODE 1N4154 SIL 25V 150MA	80368	1N4154
CR3	75341			
CR4	75341			
C01	75417	CAPACITR .01 MF 150V CER DISC	71590	DDM-103
C02	75417	CAPACITR .01 MF 150V CER DISC	71590	DDM-103
C03	78600	NOT ASSIGNED		
C04	78600	NOT ASSIGNED		
M01	106040	METER SPECIAL		
M02	78600	NOT ASSIGNED		
M03	78600	NOT ASSIGNED		
Q01	76316	TRANSSTR 2N4036 PNP SIL	79089	2N4036
Q02	80152	TRANSSTR 40250 NPN SIL AUDIO POWER	79089	40250
Q03	80152	TRANSSTR 40250 NPN SIL AUDIO POWER	79089	40250
Q04	73140	TRANSSTR 2N2270 NPN SIL	79089	2N2270
Q05	77147	TRANSSTR 2N3947 NPN SIL	80211	2N3947
Q06	76316	TRANSSTR 2N4036 PNP SIL	79089	2N4036
Q07	78600	NOT ASSIGNED		
Q08	78600	NOT ASSIGNED		
R01	72012	RESISTOR 5.6K OHM 1/2W 10% COMP	01121	RCR20G562KS
R02	71951	RESISTOR 1.0K OHM 1/4W 10% COMP	01121	RCR07G102KS
R03	71951	RESISTOR 1.0K OHM 1/4W 10% COMP	01121	RCR07G102KS
R04	71951	RESISTOR 1.0K OHM 1/4W 10% COMP	01121	RCR07G102KS
R05	71857	RESISTOR 33 OHM 1/4W 10% COMP	01121	RCR07G330KS
R06	71951	RESISTOR 1.0K OHM 1/4W 10% COMP	01121	RCR07G102KS
R07	71889	RESISTOR 100 OHM 1/2W 10% COMP	01121	RCR20G101KS
R08	71951	RESISTOR 1.0K OHM 1/4W 10% COMP	01121	RCR07G102KS
R09	71951	RESISTOR 1.0K OHM 1/4W 10% COMP	01121	RCR07G102KS
R10	71857	RESISTOR 33 OHM 1/4W 10% COMP	01121	RCR07G330KS
R11	71889	RESISTOR 100 OHM 1/2W 10% COMP	01121	RCR20G101KS
R12	71938	RESISTOR 680 OHM 1/4W 10% COMP	01121	RCR07G621KS
R13	71938	RESISTOR 680 OHM 1/4W 10% COMP	01121	RCR07G621KS
R14	71951	RESISTOR 1.0K OHM 1/4W 10% COMP	01121	RCR07G102KS
R15	71967	RESISTOR 1.5K OHM 1/2W 10% COMP	01121	RCR20G152KS
R16	78600	NOT ASSIGNED		
R17	78600	NOT ASSIGNED		
S01	72904	SWITCH TOG DPST AC 3A 250V	15605	7590K6
S02	78600	NOT ASSIGNED		
S03	78600	NOT ASSIGNED		

PARTS LIST

MODEL 6300 METER CIRCUIT

A4

COMP DESIG	S-A PART NUMBER	DESCRIPTION	FSCM	MFR PART NO.
CR01	71117	DIODE 1N756A SI ZEN 8.2V 5% .4W	80211	1N756A
CR02	71142	DIODE 1N4154 SIL 25V 150MA	80368	1N4154
CR03	71142	DIODE 1N4154 SIL 25V 150MA	80368	1N4154
CR04	71142	DIODE 1N4154 SIL 25V 150MA	80368	1N4154
CR05	71142	DIODE 1N4154 SIL 25V 150MA	80368	1N4154
CR06	71142	DIODE 1N4154 SIL 25V 150MA	80368	1N4154
CR07	78600	NOT ASSIGNED		
CR08	78600	NOT ASSIGNED		
C01	80139	CAPACITR .1 MF 50V CER SQUARE	72982	8131-M050-651-104Z
C02	80139	CAPACITR .1 MF 50V CER SQUARE	72982	8131-M050-651-104Z
C03	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C04	80139	CAPACITR .1 MF 50V CER SQUARE	72982	8131-M050-651-104Z
C05	80139	CAPACITR .1 MF 50V CER SQUARE	72982	8131-M050-651-104Z
C06	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C07	70527	CAPACITR 200 PF 500V SILVER MICA 5%	14655	CD15FD201J03
C08	80139	CAPACITR .1 MF 50V CER SQUARE	72982	8131-M050-651-104Z
C09	73497	CAPACITR 180 PF 500V SILVER MICA 5%	14655	CD15FD181J03
C10	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C11	70490	CAPACITR 30 PF 500V SILVER MICA 5%	14655	CD15ED300J03
C12	80139	CAPACITR .1 MF 50V CER SQUARE	72982	8131-M050-651-104Z
C13	75417	CAPACITR .01 MF 150V CER DISC	71590	DDM-103
C14	70470	CAPACITR 10 PF 500V SILVER MICA 5%	14655	CD15CD100J03
C15	80139	CAPACITR .1 MF 50V CER SQUARE	72982	8131-M050-651-104Z
C16	78394	CAPACITR 200 MF 15V	80183	500D207G016EF7
C17	70498	CAPACITR 47 PF 500V SILVER MICA 5%	14655	CD15ED470J03
C18	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C19	80149	CAPACITR 4.7 MF 20V SOLID TANT PCL 20%	80183	1960-475X0020EB
C20	80139	CAPACITR .1 MF 50V CER SQUARE	72982	8131-M050-651-104Z
C21	81101	CAPACITR 1 MF 50V CER SQUARE 20%	72982	8131-050-651-105M
C22	80139	CAPACITR .1 MF 50V CER SQUARE	72982	8131-M050-651-104Z
C23	80139	CAPACITR .1 MF 50V CER SQUARE	72982	8131-M050-651-104Z
C24	80139	CAPACITR .1 MF 50V CER SQUARE	72982	8131-M050-651-104Z
C25	81186	CAPACITR .47 MF 100V MYLAR 10% PC MOUNT	73445	2222-350-21474
C26	78600	NOT ASSIGNED		
C27	78600	NOT ASSIGNED		
IC1	80160	IC IF AMPL, LIMITER, FM DETECTOR	79089	CA3014
IC2	78600	NOT ASSIGNED		
IC3	78600	NOT ASSIGNED		
L01	98411	INDUCTOR VARIABLE 4.5 MHZ DISCRIMINATOR		
L02	98381	INDUCTOR VARIABLE 6.75 TURNS -BRN-		
L03	78975	INDUCTOR 15 UH SUBMIN UNSHLD MOLDED 10%	72259	DD-15
L04	78600	NOT ASSIGNED		
L05	78600	NOT ASSIGNED		
Q01	77532	TRANSSTR MPS-6511 NPN SIL RF	80211	MPS-6511
Q02	77147	TRANSSTR 2N3947 NPN SIL	80211	2N3947
Q03	77147	TRANSSTR 2N3947 NPN SIL	80211	2N3947
Q04	77147	TRANSSTR 2N3947 NPN SIL	80211	2N3947
Q05	77812	TRANSSTR 2N5248 FET N CHNL JUNC	01295	2N5248 - TIS-34
Q06	77148	TRANSSTR 2N3251 PNP SIL	80211	2N3251
Q07	78600	NOT ASSIGNED		
Q08	78600	NOT ASSIGNED		
RT1	73038	THERMSTR 1K OHM	83186	31D10
RT2	78600	NOT ASSIGNED		
RT3	78600	NOT ASSIGNED		
R01	71879	RESISTOR 82 OHM 1/4W 10% COMP	01121	RCR07G820KS
R02	71876	RESISTOR 68 OHM 1/4W 10% COMP	01121	RCR07G680KS
R03	71993	RESISTOR 3.9K OHM 1/4W 10% COMP	01121	RCR07G392KS
R04	71903	RESISTOR 180 OHM 1W 10% COMP	01121	RCR32G181KS
R05	71876	RESISTOR 68 OHM 1/4W 10% COMP	01121	RCR07G680KS
R06				
R07	72026	RESISTOR 10K OHM 1/4W 10% COMP	01121	RCR07G103KS
R08	71901	RESISTOR 180 OHM 1/4W 10% COMP	01121	RCR07G181KS

PARTS LIST

MODEL 6300 METER CIRCUIT

A4

COMP DESIG	S-A PART NUMBER	DESCRIPTION	FSCM	MFR PART NO.
R09	71901	RESISTOR 180 OHM 1/4W 10% COMP	01121	RCR07G181KS
R10	71887	RESISTOR 100 OHM 1/4W 10% COMP	01121	RCR07G101KS
R11	71876	RESISTOR 68 OHM 1/4W 10% COMP	01121	RCR07G680KS
R12	71973	RESISTOR 1.8K OHM 1/4W 10% COMP	01121	RCR07G182KS
R13	71879	RESISTOR 82 OHM 1/4W 10% COMP	01121	RCR07G820KS
R14	71966	RESISTOR 1.5K OHM 1/4W 10% COMP	01121	RCR07G152KS
R15	72113	RESISTOR 100K OHM 1/4W 10% COMP	01121	RCR07G104KS
R16	71862	RESISTOR 47 OHM 1/4W 10% COMP	01121	RCR07G470KS
R17	78725	POT 100 OHM 1/2W CERMET PC MT 3/8 DIA	01121	SV1011
R18	71993	RESISTOR 3.9K OHM 1/4W 10% COMP	01121	RCR07G392KS
R19	71918	RESISTOR 330 OHM 1/4W 10% COMP	01121	RCR07G331KS
R20	71951	RESISTOR 1.0K OHM 1/4W 10% COMP	01121	RCR07G102KS
R21	71993	RESISTOR 3.9K OHM 1/4W 10% COMP	01121	RCR07G392KS
R22	78722	POT 5K OHM 1/2W CERMET PC MT 3/8 DIA	01121	SV5021
R23	71879	RESISTOR 82 OHM 1/4W 10% COMP	01121	RCR07G820KS
R24	71887	RESISTOR 100 OHM 1/4W 10% COMP	01121	RCR07G101KS
R25	71879	RESISTOR 82 OHM 1/4W 10% COMP	01121	RCR07G820KS
R26	80370	POT 250 OHM 1/2W CERMET PC MT 3/8 DIA	01121	SV2511
R27	71993	RESISTOR 3.9K OHM 1/4W 10% COMP	01121	RCR07G392KS
R28	71989	RESISTOR 3.3K OHM 1/4W 10% COMP	01121	RCR07G332KS
R29	71973	RESISTOR 1.8K OHM 1/4W 10% COMP	01121	RCR07G182KS
R30	71879	RESISTOR 82 OHM 1/4W 10% COMP	01121	RCR07G820KS
R31				
R32	71879	RESISTOR 82 OHM 1/4W 10% COMP	01121	RCR07G820KS
R33	72189	RESISTOR 1.0 MEG 1/4W 10% COMP	01121	RCR07G105KS
R34	72026	RESISTOR 10K OHM 1/4W 10% COMP	01121	RCR07G103KS
R35	71982	RESISTOR 2.7K OHM 1/4W 10% COMP	01121	RCR07G272KS
R36	71960	RESISTOR 1.2K OHM 1/4W 10% COMP	01121	RCR07G122KS
R37	71941	RESISTOR 820 OHM 1/4W 10% COMP	01121	RCR07G821KS
R38	71918	RESISTOR 330 OHM 1/4W 10% COMP	01121	RCR07G331KS
R39	78957	POT 500 OHM 1/2W CERMET PC MT 3/8 DIA	01121	SV5011
R40	71938	RESISTOR 680 OHM 1/4W 10% COMP	01121	RCR07G681KS
R41	71907	RESISTOR 220 OHM 1/4W 10% COMP	01121	RCR07G221KS
R42	72214	RESISTOR 4.7 MEG 1/4W 10% COMP	01121	RCR07G475KS
R43	71993	RESISTOR 3.9K OHM 1/4W 10% COMP	01121	RCR07G392KS
R44	71901	RESISTOR 180 OHM 1/4W 10% COMP	01121	RCR07G181KS
R45	78600	NOT ASSIGNED		
R46	78600	NOT ASSIGNED		
S01	79108	SWITCH ROT 2P 2-6 POS NSH SUBMIN	71590	PSA-203
S02	78600	NOT ASSIGNED		
S03	78600	NOT ASSIGNED		

PARTS LIST

MODEL 6300 VESTIGIAL SIDEBAND FILTER

A5P1

COMP DESIG	S-A PART NUMBER	DESCRIPTION	FSCM	MFR PART NO.
CR01	81124	DIODE MA47600 PIN DIODE	96341	MA47600
CR02	78600	NOT ASSIGNED		
CR03	78600	NOT ASSIGNED		
C01	70470	CAPACITR 10 PF 500V SILVER MICA 5%	14655	CD15CD100J03
C02	70487	CAPACITR 27 PF 500V SILVER MICA 5%	14655	CD15ED270J03
C03	81125	CAPACITR .25-1.5 PF TEFLON TRIMMER PC MT	72982	530-000
C04	73488	CAPACITR 6 PF 500V CER TUBULAR	00656	CC20CH060C
C05	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C06	81125	CAPACITR .25-1.5 PF TEFLON TRIMMER PC MT	72982	530-000
C07	73488	CAPACITR 6 PF 500V CER TUBULAR	00656	CC20CH060C
C08	81125	CAPACITR .25-1.5 PF TEFLON TRIMMER PC MT	72982	530-000
C09	70470	CAPACITR 10 PF 500V SILVER MICA 5%	14655	CD15CD100J03
C10	80142	CAPACITR 20 PF 500V SILVER MICA 5%	14655	CD15ED200J
C11	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C12	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C13	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C14	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C15	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C16	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C17	73488	CAPACITR 6 PF 500V CER TUBULAR	00656	CC20CH060C
C18	70509	CAPACITR 68 PF 500V SILVER MICA 5%	14655	CD15ED680J03
C19	70522	CAPACITR 150 PF 500V SILVER MICA 5%	14655	CD15ED151J03
C20	70522	CAPACITR 150 PF 500V SILVER MICA 5%	14655	CD15ED151J03
C21	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C22	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C23	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C24	70470	CAPACITR 10 PF 500V SILVER MICA 5%	14655	CD15CD100J03
C25				
C26	81125	CAPACITR .25-1.5 PF TEFLON TRIMMER PC MT	72982	530-000
C27	73488	CAPACITR 6 PF 500V CER TUBULAR	00656	CC20CH060C
C28	81125	CAPACITR .25-1.5 PF TEFLON TRIMMER PC MT	72982	530-000
C29	73488	CAPACITR 6 PF 500V CER TUBULAR	00656	CC20CH060C
C30	81125	CAPACITR .25-1.5 PF TEFLON TRIMMER PC MT	72982	530-000
C31	70470	CAPACITR 10 PF 500V SILVER MICA 5%	14655	CD15CD100J03
C32	70487	CAPACITR 27 PF 500V SILVER MICA 5%	14655	CD15ED270J03
C33	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C34	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C35	78600	NOT ASSIGNED		
C36	78600	NOT ASSIGNED		
J01				
J02	81258	CONN COAX F FEM TO PC BRD CHSS GR PC MT	82316	GF-61-A-PC
J03	81258	CONN COAX F FEM TO PC BRD CHSS GR PC MT	82316	GF-61-A-PC
J04	78600	NOT ASSIGNED		
J05	78600	NOT ASSIGNED		
K01	81012	RELAY 12VDC DPDT REED PC MT	24446	3SBV5004G1
K02	78600	NOT ASSIGNED		
K03	78600	NOT ASSIGNED		
L01				
L02	78330	INDUCTOR 2.7 UH SUBMIN UNSHLD 10%	76493	70F276A1
L03	80045	COIL .9-1.45 UH VAR #30 WIRE 14 1/2 TURN	04213	434-2
L04	80045	COIL .9-1.45 UH VAR #30 WIRE 14 1/2 TURN	04213	434-2
L05	80045	COIL .9-1.45 UH VAR #30 WIRE 14 1/2 TURN	04213	434-2
L06	80045	COIL .9-1.45 UH VAR #30 WIRE 14 1/2 TURN	04213	434-2
L07	78330	INDUCTOR 2.7 UH SUBMIN UNSHLD 10%	76493	70F276A1
L08	78330	INDUCTOR 2.7 UH SUBMIN UNSHLD 10%	76493	70F276A1
L09	80045	COIL .9-1.45 UH VAR #30 WIRE 14 1/2 TURN	04213	434-2
L10	78330	INDUCTOR 2.7 UH SUBMIN UNSHLD 10%	76493	70F276A1
L11	98416	INDUCTOR VARIABLE 7.25 TURNS -BLU-		
L12	80045	COIL .9-1.45 UH VAR #30 WIRE 14 1/2 TURN	04213	434-2
L13	80045	COIL .9-1.45 UH VAR #30 WIRE 14 1/2 TURN	04213	434-2
L14	80045	COIL .9-1.45 UH VAR #30 WIRE 14 1/2 TURN	04213	434-2
L15	80045	COIL .9-1.45 UH VAR #30 WIRE 14 1/2 TURN	04213	434-2

PARTS LIST

MODEL 6300 VESTIGIAL SIDEBAND FILTER-continued

A5P1

COMP DESIG	S-A PART NUMBER	DESCRIPTION	FSCM	MFR PART NO.
L16	80045	COIL .9-1.45 UH VAR #30 WIRE 14 1/2 TURN	04213	434-2
L17	78600	NOT ASSIGNED		
L18	78600	NOT ASSIGNED		
Q1	78197	TRANSSTR 2N3866 NPN SIL	79089	2N3866
Q2	78197	TRANSSTR 2N3866 NPN SIL	79089	2N3866
Q3	78197	TRANSSTR 2N3866 NPN SIL	79089	2N3866
R01	71853	RESISTOR 27 OHM 1/4W 10% COMP	01121	RCR07G270KS
R02				
R03	71853	RESISTOR 27 OHM 1/4W 10% COMP	01121	RCR07G270KS
R04	77524	RESISTOR 75 OHM 1/4W 5% COMP	01121	RCR07G750JS
R05	72002	RESISTOR 4.7K OHM 1/4W 10% COMP	01121	RCR07G472KS
R06	71951	RESISTOR 1.0K OHM 1/4W 10% COMP	01121	RCR07G102KS
R07	71853	RESISTOR 27 OHM 1/4W 10% COMP	01121	RCR07G270KS
R08	76275	RESISTOR 22 OHM 1/4W 10% COMP	01121	RCR07G220KS
R09	71887	RESISTOR 100 OHM 1/4W 10% COMP	01121	RCR07G101KS
R10	71879	RESISTOR 82 OHM 1/4W 10% COMP	01121	RCR07G820KS
R11	79398	POT 5K OHM 1/2W COMP PNL MT 7/8 SHFT	77764	RV6NAYSD502A
R12	71977	RESISTOR 2.2K OHM 1/4W 10% COMP	01121	RCR07G222KS
R13	71960	RESISTOR 1.2K OHM 1/4W 10% COMP	01121	RCR07G122KS
R14	71920	RESISTOR 390 OHM 1/4W 10% COMP	01121	RCR07G391KS
R15	72011	RESISTOR 5.6K OHM 1/4W 10% COMP	01121	RCR07G562KS
R16	72026	RESISTOR 10K OHM 1/4W 10% COMP	01121	RCR07G103KS
R17	77524	RESISTOR 75 OHM 1/4W 5% COMP	01121	RCR07G750JS
R18	71857	RESISTOR 33 OHM 1/4W 10% COMP	01121	RCR07G330KS
R19	71857	RESISTOR 33 OHM 1/4W 10% COMP	01121	RCR07G330KS
R20	76277	RESISTOR 12 OHM 1/4W 10% COMP	01121	RCR07G120KS
R21				
R22	76277	RESISTOR 12 OHM 1/4W 10% COMP	01121	RCR07G120KS
R23	71879	RESISTOR 82 OHM 1/4W 10% COMP	01121	RCR07G820KS
R24	71931	RESISTOR 560 OHM 1/4W 10% COMP	01121	RCR07G561KS
R25	71951	RESISTOR 1.0K OHM 1/4W 10% COMP	01121	RCR07G102KS
R26	78600	NOT ASSIGNED		
R27	78600	NOT ASSIGNED		

PARTS LIST

MODEL 6300 AUDIO MODULATOR

A6P1

COMP DESIG	S-A PART NUMBER	DESCRIPTION	FSCM	MFR PART NO.
CR01	71142	DIODE 1N4154 SIL 25V 150MA	80368	1N4154
CR02	71142	DIODE 1N4154 SIL 25V 150MA	80368	1N4154
CR03	71142	DIODE 1N4154 SIL 25V 150MA	80368	1N4154
CR04	71142	DIODE 1N4154 SIL 25V 150MA	80368	1N4154
CR05	71142	DIODE 1N4154 SIL 25V 150MA	80368	1N4154
CR06	71123	DIODE 1N952 VARACTOR SIL, WIRE LEADS	73293	1N952
CR07	81100	IC DIODE ARRAY 120 MW MAX	79089	CA3019
CR08	71142	DIODE 1N4154 SIL 25V 150MA	80368	1N4154
CR09	71142	DIODE 1N4154 SIL 25V 150MA	80368	1N4154
CR10	78600	NOT ASSIGNED		
CR11	78600	NOT ASSIGNED		
C01	80148	CAPACITR 10 MF 20V SOLID TANT POL 20%	80183	196D-106X0020FB
C02	80139	CAPACITR .1 MF 50V CER SQUARE	72982	8131-M050-651-104Z
C03	73497	CAPACITR 180 PF 500V SILVER MICA 5%	14655	CD15FD181J03
C04	81099	CAPACITR .0047 MF 100V CER SQUARE 10%	72982	8121-100-WSR0-472K
C05	80148	CAPACITR 10 MF 20V SOLID TANT POL 20%	80183	196D-106X0020FB
C06	81098	CAPACITR .47 MF 50V CER SQUARE 20%	72982	8131-050-651-474M
C07				
C08	81185	CAPACITR 680 PF 300V SILVER MICA 5%	84171	DM-15-681J
C09	80139	CAPACITR .1 MF 50V CER SQUARE	72982	8131-M050-651-104Z
C10	80148	CAPACITR 10 MF 20V SOLID TANT POL 20%	80183	196D-106X0020FB
C11	75417	CAPACITR .01 MF 150V CER DISC	71590	DDM-103
C12	75417	CAPACITR .01 MF 150V CER DISC	71590	DDM-103
C13	80139	CAPACITR .1 MF 50V CER SQUARE	72982	8131-M050-651-104Z
C14	81185	CAPACITR 680 PF 300V SILVER MICA 5%	84171	DM-15-681J
C15	70536	CAPACITR 390 PF 500V SILVER MICA 5%	14655	CD15FD391J03
C16	81095	CAPACITR 3.3 MF 50V CER SQUARE 20%	72982	8151-050-651-335M
C17	75417	CAPACITR .01 MF 150V CER DISC	71590	DDM-103
C18	81095	CAPACITR 3.3 MF 50V CER SQUARE 20%	72982	8151-050-651-335M
C19	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C20	70522	CAPACITR 150 PF 500V SILVER MICA 5%	14655	CD15FD151J03
C21	70498	CAPACITR 47 PF 500V SILVER MICA 5%	14655	CD15ED470J03
C22	80139	CAPACITR .1 MF 50V CER SQUARE	72982	8131-M050-651-104Z
C23	81185	CAPACITR 680 PF 300V SILVER MICA 5%	84171	DM-15-681J
C24	70498	CAPACITR 47 PF 500V SILVER MICA 5%	14655	CD15ED470J03
C25	80139	CAPACITR .1 MF 50V CER SQUARE	72982	8131-M050-651-104Z
C26	80139	CAPACITR .1 MF 50V CER SQUARE	72982	8131-M050-651-104Z
C27	75417	CAPACITR .01 MF 150V CER DISC	71590	DDM-103
C28	75417	CAPACITR .01 MF 150V CER DISC	71590	DDM-103
C29	81185	CAPACITR 680 PF 300V SILVER MICA 5%	84171	DM-15-681J
C30	75417	CAPACITR .01 MF 150V CER DISC	71590	DDM-103
C31	70509	CAPACITR 68 PF 500V SILVER MICA 5%	14655	CD15ED680J03
C32	80139	CAPACITR .1 MF 50V CER SQUARE	72982	8131-M050-651-104Z
C33	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C34	75193	CAPACITR .001 MF 500V SILVER MICA 5%	14655	CD19FD102J03
C35	80139	CAPACITR .1 MF 50V CER SQUARE	72982	8131-M050-651-104Z
C36	80139	CAPACITR .1 MF 50V CER SQUARE	72982	8131-M050-651-104Z
C37	80139	CAPACITR .1 MF 50V CER SQUARE	72982	8131-M050-651-104Z
C38	80139	CAPACITR .1 MF 50V CER SQUARE	72982	8131-M050-651-104Z
C39	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C40	70498	CAPACITR 47 PF 500V SILVER MICA 5%	14655	CD15ED470J03
C41	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C42	73496	CAPACITR 56 PF 500V SILVER MICA 5%	14655	CD15ED560J03
C43	70532	CAPACITR 300 PF 500V SILVER MICA 5%	14655	CD15FD301J03
C44	73486	CAPACITR 1 PF 500V CER TUBULAR	00656	CC20CK010C
C45	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C46	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C47	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C48	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C49	70498	CAPACITR 47 PF 500V SILVER MICA 5%	14655	CD15ED470J03
C50	76381	CAPACITR 1.5 PF 500V CER TUBULAR	00656	CC20CK1R5C
C51	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G

PARTS LIST

MODEL 6300 AUDIO MODULATOR-continued

A6P1

COMP DESIG	S-A PART NUMBER	DESCRIPTION	FSCM	MFR PART NO.
C52	73496	CAPACITR 56 PF 500V SILVER MICA 5%	14655	CD15FD560J03
C53	70532	CAPACITR 300 PF 500V SILVER MICA 5%	14655	CD15FD301J03
C54	81157	CAPACITR .22 MF 50V CER SQUARE 20%	72982	8131-M050-W5R-224M
C55	80139	CAPACITR .1 MF 50V CER SQUARE	72982	8131-M050-651-104Z
C56	73496	CAPACITR 56 PF 500V SILVER MICA 5%	14655	CD15ED560J03
C57	73497	CAPACITR 180 PF 500V SILVER MICA 5%	14655	CD15FD181J03
C58	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C59	80139	CAPACITR .1 MF 50V CER SQUARE	72982	8131-M050-651-104Z
C60	78600	NOT ASSIGNED		
C61	78600	NOT ASSIGNED		
IC1	77581	IC OP AMPL 709C EQ	80211	MC1709CG
IC2	78715	IC DIFF CASCODE RF AMPL	79069	CA-3028A
IC3	78600	NOT ASSIGNED		
IC4	78600	NOT ASSIGNED		
L01	81112	INDUCTOR .40-.80 MH PC MT	04213	683-11
L02	81112	INDUCTOR .40-.80 MH PC MT	04213	683-11
L03	81096	INDUCTOR 11-17.5 UH	04213	434-7
L04	81096	INDUCTOR 11-17.5 UH	04213	434-7
L05	80132	INDUCTOR 1.0 UH UNSHLD EPOXY COAT 10%	09021	4426-6K
L06	98381	INDUCTOR VARIABLE 6.75 TURNS -BRN-		
L07	98381	INDUCTOR VARIABLE 6.75 TURNS -BRN-		
L08	98381	INDUCTOR VARIABLE 6.75 TURNS -BRN-		
L09	98381	INDUCTOR VARIABLE 6.75 TURNS -BRN-		
L10	78600	NOT ASSIGNED		
L11	78600	NOT ASSIGNED		
Q01	77147	TRANSSTR 2N3947 NPN SIL	80211	2N3947
Q02	77147	TRANSSTR 2N3947 NPN SIL	80211	2N3947
Q03	77812	TRANSSTR 2N5248 FET N CHNL JUNC	01295	2N5248 - TIS-34
Q04	77147	TRANSSTR 2N3947 NPN SIL	80211	2N3947
Q05	77147	TRANSSTR 2N3947 NPN SIL	80211	2N3947
Q06	77147	TRANSSTR 2N3947 NPN SIL	80211	2N3947
Q07	77147	TRANSSTR 2N3947 NPN SIL	80211	2N3947
Q08	77147	TRANSSTR 2N3947 NPN SIL	80211	2N3947
Q09	77147	TRANSSTR 2N3947 NPN SIL	80211	2N3947
Q10	78197	TRANSSTR 2N3866 NPN SIL	79069	2N3866
Q11	78600	NOT ASSIGNED		
Q12	78600	NOT ASSIGNED		
R01	71887	RESISTOR 100 OHM 1/4W 10% COMP	01121	RCR07G101KS
R02	71977	RESISTOR 2.2K OHM 1/4W 10% COMP	01121	RCR07G222KS
R03	71989	RESISTOR 3.3K OHM 1/4W 10% COMP	01121	RCR07G332KS
R04	71907	RESISTOR 220 OHM 1/4W 10% COMP	01121	RCR07G221KS
R05	81158	POT DUAL 100 FRONT 100 REAR 1/2W COMP	01121	GD1G056S1C1UA
R06	71907	RESISTOR 220 OHM 1/4W 10% COMP	01121	RCR07G221KS
R07	71966	RESISTOR 1.5K OHM 1/4W 10% COMP	01121	RCR07G152KS
R08	71857	RESISTOR 33 OHM 1/4W 10% COMP	01121	RCR07G330KS
R09	71887	RESISTOR 100 OHM 1/4W 10% COMP	01121	RCR07G101KS
R10	72011	RESISTOR 5.6K OHM 1/4W 10% COMP	01121	RCR07G562KS
R11	71887	RESISTOR 100 OHM 1/4W 10% COMP	01121	RCR07G101KS
R12	71887	RESISTOR 100 OHM 1/4W 10% COMP	01121	RCR07G101KS
R13				
R14	71857	RESISTOR 33 OHM 1/4W 10% COMP	01121	RCR07G330KS
R15	72165	RESISTOR 470K OHM 1/4W 10% COMP	01121	RCR07G474KS
R16	72214	RESISTOR 4.7 MEG 1/4W 10% COMP	01121	RCR07G475KS
R17				
R18	78724	POT 1K OHM 1/2W CERMET PC MT 3/8 DIA	01121	SV1021
R19	72123	RESISTOR 150K OHM 1/4W 10% COMP	01121	RCR07G154KS
R20	71951	RESISTOR 1.0K OHM 1/4W 10% COMP	01121	RCR07G102KS
R21	71989	RESISTOR 3.3K OHM 1/4W 10% COMP	01121	RCR07G332KS
R22	72077	RESISTOR 47K OHM 1/4W 10% COMP	01121	RCR07G473KS
R23	72039	RESISTOR 15K OHM 1/4W 10% COMP	01121	RCR07G153KS
R24	72088	RESISTOR 56K OHM 1/4W 10% COMP	01121	RCR07G563KS
R25	78724	POT 1K OHM 1/2W CERMET PC MT 3/8 DIA	01121	SV1021

PARTS LIST

MODEL 6300 AUDIO MODULATOR -continued

A6P1

COMP DESIG	S-A PART NUMBER	DESCRIPTION	FSCM	MFR PART NO.
R26				
R27	71907	RESISTOR 220 OHM 1/4W 10% COMP	01121	RCR07G221KS
R28	72039	RESISTOR 15K OHM 1/4W 10% COMP	01121	RCR07G153KS
R29	72039	RESISTOR 15K OHM 1/4W 10% COMP	01121	RCR07G153KS
R30	71989	RESISTOR 3.3K OHM 1/4W 10% COMP	01121	RCR07G332KS
R31	72026	RESISTOR 10K OHM 1/4W 10% COMP	01121	RCR07G103KS
R32	71887	RESISTOR 100 OHM 1/4W 10% COMP	01121	RCR07G101KS
R33	72011	RESISTOR 5.6K OHM 1/4W 10% COMP	01121	RCR07G562KS
R34	72019	RESISTOR 8.2K OHM 1/4W 10% COMP	01121	RCR07G822KS
R35	72026	RESISTOR 10K OHM 1/4W 10% COMP	01121	RCR07G103KS
R36	71897	RESISTOR 150 OHM 1/4W 10% COMP	01121	RCR07G151KS
R37	71897	RESISTOR 150 OHM 1/4W 10% COMP	01121	RCR07G151KS
R38	71951	RESISTOR 1.0K OHM 1/4W 10% COMP	01121	RCR07G102KS
R39	72011	RESISTOR 5.6K OHM 1/4W 10% COMP	01121	RCR07G562KS
R40				
R41	71887	RESISTOR 100 OHM 1/4W 10% COMP	01121	RCR07G101KS
R42	72002	RESISTOR 4.7K OHM 1/4W 10% COMP	01121	RCR07G472KS
R43	72014	RESISTOR 6.8K OHM 1/4W 10% COMP	01121	RCR07G682KS
R44	71887	RESISTOR 100 OHM 1/4W 10% COMP	01121	RCR07G101KS
R45	71943	RESISTOR 820 OHM 1W 10% COMP	01121	RCR32G821KS
R46	72011	RESISTOR 5.6K OHM 1/4W 10% COMP	01121	RCR07G562KS
R47	72014	RESISTOR 6.8K OHM 1/4W 10% COMP	01121	RCR07G682KS
R48	72011	RESISTOR 5.6K OHM 1/4W 10% COMP	01121	RCR07G562KS
R49	71989	RESISTOR 3.3K OHM 1/4W 10% COMP	01121	RCR07G332KS
R50	71973	RESISTOR 1.8K OHM 1/4W 10% COMP	01121	RCR07G182KS
R51	71989	RESISTOR 3.3K OHM 1/4W 10% COMP	01121	RCR07G332KS
R52	71887	RESISTOR 100 OHM 1/4W 10% COMP	01121	RCR07G101KS
R53	71941	RESISTOR 820 OHM 1/4W 10% COMP	01121	RCR07G821KS
R54	71977	RESISTOR 2.2K OHM 1/4W 10% COMP	01121	RCR07G222KS
R55	72014	RESISTOR 6.8K OHM 1/4W 10% COMP	01121	RCR07G682KS
R56	72026	RESISTOR 10K OHM 1/4W 10% COMP	01121	RCR07G103KS
R57				
R58	71887	RESISTOR 100 OHM 1/4W 10% COMP	01121	RCR07G101KS
R59	71941	RESISTOR 820 OHM 1/4W 10% COMP	01121	RCR07G821KS
R60	71989	RESISTOR 3.3K OHM 1/4W 10% COMP	01121	RCR07G332KS
R61	71966	RESISTOR 1.5K OHM 1/4W 10% COMP	01121	RCR07G152KS
R62	71931	RESISTOR 560 OHM 1/4W 10% COMP	01121	RCR07G561KS
R63	76274	RESISTOR 18 OHM 1/4W 10% COMP	01121	RCR07G180KS
R64	71897	RESISTOR 150 OHM 1/4W 10% COMP	01121	RCR07G151KS
R65	71989	RESISTOR 3.3K OHM 1/4W 10% COMP	01121	RCR07G332KS
R66	71876	RESISTOR 68 OHM 1/4W 10% COMP	01121	RCR07G680KS
R67				
R68	71993	RESISTOR 3.9K OHM 1/4W 10% COMP	01121	RCR07G392KS
R69	76992	POT 100K OHM 1/4W COMP PC MT 1/2 DIA	01121	ER104M
R70	71887	RESISTOR 100 OHM 1/4W 10% COMP	01121	RCR07G101KS
R71	72026	RESISTOR 10K OHM 1/4W 10% COMP	01121	RCR07G103KS
R72	71887	RESISTOR 100 OHM 1/4W 10% COMP	01121	RCR07G101KS
R73	71907	RESISTOR 220 OHM 1/4W 10% COMP	01121	RCR07G221KS
R74	71989	RESISTOR 3.3K OHM 1/4W 10% COMP	01121	RCR07G332KS
R75	71931	RESISTOR 560 OHM 1/4W 10% COMP	01121	RCR07G561KS
R76	77524	RESISTOR 75 OHM 1/4W 5% COMP	01121	RCR07G750JS
R77	71977	RESISTOR 2.2K OHM 1/4W 10% COMP	01121	RCR07G222KS
R78	71894	RESISTOR 120 OHM 1/4W 10% COMP	01121	RCR07G121KS
R79	71966	RESISTOR 1.5K OHM 1/4W 10% COMP	01121	RCR07G152KS
R80	91110	POT 250 OHM 1/2W COMP PNL MT 7/8 SHFT	01121	RV6NAYSD251A
R81	71951	RESISTOR 1.0K OHM 1/4W 10% COMP	01121	RCR07G102KS
R82	71941	RESISTOR 820 OHM 1/4W 10% COMP	01121	RCR07G821KS
R83	71879	RESISTOR 82 OHM 1/4W 10% COMP	01121	RCR07G820KS
R84	71887	RESISTOR 100 OHM 1/4W 10% COMP	01121	RCR07G101KS
R85	71853	RESISTOR 27 OHM 1/4W 10% COMP	01121	RCR07G270KS
R86	71887	RESISTOR 100 OHM 1/4W 10% COMP	01121	RCR07G101KS
R87	71853	RESISTOR 27 OHM 1/4W 10% COMP	01121	RCR07G270KS
R88	71931	RESISTOR 560 OHM 1/4W 10% COMP	01121	RCR07G561KS
R89	71879	RESISTOR 82 OHM 1/4W 10% COMP	01121	RCR07G820KS
R90	71951	RESISTOR 1.0K OHM 1/4W 10% COMP	01121	RCR07G102KS
R91	72088	RESISTOR 56K OHM 1/4W 10% COMP	01121	RCR07G563KS
R92				
R93	75580	RESISTOR 39 OHM 1W 10% COMP	01121	RCR32G390KS
R94	71966	RESISTOR 1.5K OHM 1/4W 10% COMP	01121	RCR07G152KS
R95	78600	NOT ASSIGNED		
R96	78600	NOT ASSIGNED		
T01	108840	TOROID 2 TURNS PRI 6 TURNS SEC		
T02	78600	NOT ASSIGNED		
T03	78600	NOT ASSIGNED		
Y01	81097	CRYSTAL 4.20 MHZ .0025% SERIES RES	27073	SCM 18 HOLDER
Y02	81097	CRYSTAL 4.20 MHZ .0025% SERIES RES	27073	SCM 18 HOLDER
Y03	81097	CRYSTAL 4.20 MHZ .0025% SERIES RES	27073	SCM 18 HOLDER

PARTS LIST

MODEL 6300 CHASSIS

COMP DESIG	S-A PART NUMBER	DESCRIPTION	FSCM	MFR PART NO.
C01	77536	CAPACITR 2X1000MFD 35V	37942	WP 201.5
C02	77536	CAPACITR 2X1000MFD 35V	37942	WP 201.5
C03	81254	CAPACITR .01 MF 1.4KV CER AC LINE BYPASS	71590	CI-203
C04	81254	CAPACITR .01 MF 1.4KV CER AC LINE BYPASS	71590	CI-203
C05	81254	CAPACITR .01 MF 1.4KV CER AC LINE BYPASS	71590	CI-203
C06	81254	CAPACITR .01 MF 1.4KV CER AC LINE BYPASS	71590	CI-203
C07	78600	NOT ASSIGNED		
C08	78600	NOT ASSIGNED		
F01	71220	FUSE 1 AMP SLO BLO	75915	3AG
F02	78600	NOT ASSIGNED		
F03	78600	NOT ASSIGNED		
J01	80104	CONN COAX UHF FEM TO CUP 4 HOLE MT	02660	SO239
J02				
J03				
J04	80368	CONN COAX F FEM TO TERM THREADED DBL D	23770	CF-61A
J05	80103	JACK ASSY DBL BANANA 3/4 IN CNTRS	83330	269 BB
J06	80104	CONN COAX UHF FEM TO CUP 4 HOLE MT	02660	SO239
J07				
J08	80368	CONN COAX F FEM TO TERM THREADED DBL D	23770	CF-61A
J09	80368	CONN COAX F FEM TO TERM THREADED DBL D	23770	CF-61A
J10	80368	CONN COAX F FEM TO TERM THREADED DBL D	23770	CF-61A
J11	80368	CONN COAX F FEM TO TERM THREADED DBL D	23770	CF-61A
J12	78600	NOT ASSIGNED		
J13	78600	NOT ASSIGNED		
R01	80107	RESISTOR 10 OHM 10W	75042	PW-10
R02	80107	RESISTOR 10 OHM 10W	75042	PW-10
R03	78600	NOT ASSIGNED		
R04	78600	NOT ASSIGNED		
S01	72951	SWITCH DPDT SLIDE	79727	G326
S02	78600	NOT ASSIGNED		
S03	78600	NOT ASSIGNED		
XA1	75270	CONNECTR 18 PIN SINGLE READOUT	71785	250-18-30-170
XA2	75270	CONNECTR 18 PIN SINGLE READOUT	71785	250-18-30-170
XA3	75270	CONNECTR 18 PIN SINGLE READOUT	71785	250-18-30-170
XA4	75270	CONNECTR 18 PIN SINGLE READOUT	71785	250-18-30-170
XA5	78530	CONN RECT BODY W/O CONTACTS 20 POS RECEP	09922	MS20RM-61
XA6	75270	CONNECTR 18 PIN SINGLE READOUT	71785	250-18-30-170
XA7	78530	CONN RECT BODY W/O CONTACTS 20 POS RECEP	09922	MS20RM-61
XA8	80102	CONN RND 6-COND FEM CHASSIS MT	02660	78-PCG6
XA9	78530	CONN RECT BODY W/O CONTACTS 20 POS RECEP	09922	MS20RM-61

PARTS LIST

MODEL 6300 4.5 MHz CONVERTER

COMP DESIG	S-A PART NUMBER	DESCRIPTION	FSCM	MFR PART NO.
CR1	81100	IC DIODE ARRAY 120 MW MAX	79089	CA3019
CR2	71142	DIODE 1N4154 SIL 25V 150MA	80368	1N4154
CR3	71142	DIODE 1N4154 SIL 25V 150MA	80368	1N4154
CR4	78600	NOT ASSIGNED		
CR5	78600	NOT ASSIGNED		
C01	79385	CAPACITR 430 PF 500V SILVER MICA 5%	14655	CD15FD431J03
C02	81329	CAPACITR .005028 MF 500V SILVER MICA 5%	81413	DM-30
C03	81330	CAPACITR 886 PF 100V SILVER MICA 5%	81413	DM-15
C04	81331	CAPACITR .010435 PF 500V SILVER MICA 5%	81413	DM-30
C05	81330	CAPACITR 886 PF 100V SILVER MICA 5%	81413	DM-15
C06	81332	CAPACITR 950 PF 100V SILVER MICA 5%	81413	DM-15
C07	81332	CAPACITR 950 PF 100V SILVER MICA 5%	81413	DM-15
C08	81332	CAPACITR 950 PF 100V SILVER MICA 5%	81413	DM-15
C09	75200	CAPACITR .0024 MF 500V SILVER MICA 5%	84171	DM19 242J
C10	80139	CAPACITR .1 MF 50V CER SQUARE	72982	8131-M050-651-104Z
C11	75200	CAPACITR .0024 MF 500V SILVER MICA 5%	84171	DM19 242J
C12	80139	CAPACITR .1 MF 50V CER SQUARE	72982	8131-M050-651-104Z
C13	80139	CAPACITR .1 MF 50V CER SQUARE	72982	8131-M050-651-104Z
C14	78976	CAPACITR 15-60 PF MIN CER DISC PC MT	72982	538-011 F 15-60
C15	75200	CAPACITR .0024 MF 500V SILVER MICA 5%	84171	DM19 242J
C16	75199	CAPACITR 82 PF 500V SILVER MICA 5%	14655	CD15ED820J03
C17	70529	CAPACITR 220 PF 500V SILVER MICA 5%	14655	CD15FD221J03
C18	75200	CAPACITR .0024 MF 500V SILVER MICA 5%	84171	DM19 242J
C19	78976	CAPACITR 15-60 PF MIN CER DISC PC MT	72982	538-011 F 15-60
C20	80139	CAPACITR .1 MF 50V CER SQUARE	72982	8131-M050-651-104Z
C21	80139	CAPACITR .1 MF 50V CER SQUARE	72982	8131-M050-651-104Z
C22	75217	CAPACITR 10 MF 50V	80183	500D106G050CB7
C23	80139	CAPACITR .1 MF 50V CER SQUARE	72982	8131-M050-651-104Z
C24	80139	CAPACITR .1 MF 50V CER SQUARE	72982	8131-M050-651-104Z
C25	80139	CAPACITR .1 MF 50V CER SQUARE	72982	8131-M050-651-104Z
C26	75217	CAPACITR 10 MF 50V	80183	500D106G050CB7
C27	80139	CAPACITR .1 MF 50V CER SQUARE	72982	8131-M050-651-104Z
C28	80139	CAPACITR .1 MF 50V CER SQUARE	72982	8131-M050-651-104Z
C29	78976	CAPACITR 15-60 PF MIN CER DISC PC MT	72982	538-011 F 15-60
C30	80139	CAPACITR .1 MF 50V CER SQUARE	72982	8131-M050-651-104Z
C31	75199	CAPACITR 82 PF 500V SILVER MICA 5%	14655	CD15ED820J03
C32	73497	CAPACITR 180 PF 500V SILVER MICA 5%	14655	CD15FD181J03
C33	80139	CAPACITR .1 MF 50V CER SQUARE	72982	8131-M050-651-104Z
C34	80139	CAPACITR .1 MF 50V CER SQUARE	72982	8131-M050-651-104Z
C35	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C36	70498	CAPACITR 47 PF 500V SILVER MICA 5%	14655	CD15ED470J03
C37	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C38	73496	CAPACITR 56 PF 500V SILVER MICA 5%	14655	CD15ED560J03
C39	70532	CAPACITR 300 PF 500V SILVER MICA 5%	14655	CD15FD301J03
C40	73486	CAPACITR 1 PF 500V CER TUBULAR	00656	CC20CK010C
C41	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C42	73496	CAPACITR 56 PF 500V SILVER MICA 5%	14655	CD15ED560J03
C43	73497	CAPACITR 180 PF 500V SILVER MICA 5%	14655	CD15FD181J03
C44	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C45	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C46	70498	CAPACITR 47 PF 500V SILVER MICA 5%	14655	CD15ED470J03
C47	76381	CAPACITR 1.5 PF 500V CER TUBULAR	00656	CC20CK1R5C
C48	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C49	73496	CAPACITR 56 PF 500V SILVER MICA 5%	14655	CD15ED560J03
C50	70532	CAPACITR 300 PF 500V SILVER MICA 5%	14655	CD15FD301J03
C51	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C52	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C53	80139	CAPACITR .1 MF 50V CER SQUARE	72982	8131-M050-651-104Z
C54	80139	CAPACITR .1 MF 50V CER SQUARE	72982	8131-M050-651-104Z
C55	80139	CAPACITR .1 MF 50V CER SQUARE	72982	8131-M050-651-104Z
C56	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C57	80139	CAPACITR .1 MF 50V CER SQUARE	72982	8131-M050-651-104Z

PARTS LIST

MODEL 6300 4.5 MHz CONVERTER-continued

COMP DESIG	S-A PART NUMBER	DESCRIPTION	FSCM	MFR PART NO.
C58	78600	NOT ASSIGNED		
C59	78600	NOT ASSIGNED		
IC1	79067	IC AMPL AND/OR LIMITER	79089	CA-3012
IC2	78715	IC DIFF CASCODE RF AMPL	79089	CA-3028A
IC3	78600	NOT ASSIGNED		
IC4	78600	NOT ASSIGNED		
L01	112416	INDUCTOR VARIABLE 4.66UH PC MT		
L02	81333	INDUCTOR 8.52 UH UNSHLD MOLDED 1%	91637	IM-2
L03	81334	INDUCTOR 2.49 UH UNSHLD MOLDED 1%	91637	IM-2
L04	81335	INDUCTOR 3.56 UH UNSHLD MOLDED 1%	91637	IM-2
L05	81336	INDUCTOR 2.68 UH UNSHLD MOLDED 1%	91637	IM-2
L06	77642	COIL RF 12 1/6 & 5 2/3 TURNS AWG NO. 20	02113	N-9486
L07	76938	INDUCTOR 10 UH SUBMIN SHLD ENCAP 10%	72259	WEE-WEE 10
L08	77637	COIL RF 11.5 TURNS AWG NO. 20	02113	N-9429
L09	78508	INDUCTOR 8.2 UH SUBMIN UNSHLD MOLDED 10%	72259	DD-8.20
L10	76938	INDUCTOR 10 UH SUBMIN SHLD ENCAP 10%	72259	WEE-WEE 10
L11	80132	INDUCTOR 1.0 UH UNSHLD EPOXY COAT 10%	09021	4426-6K
L12	98381	INDUCTOR VARIABLE 6.75 TURNS -BRN-		
L13	98381	INDUCTOR VARIABLE 6.75 TURNS -BRN-		
L14	98381	INDUCTOR VARIABLE 6.75 TURNS -BRN-		
L15	98381	INDUCTOR VARIABLE 6.75 TURNS -BRN-		
L16	78600	NOT ASSIGNED		
L17	78600	NOT ASSIGNED		
Q01	77147	TRANSSTR 2N3947 NPN SIL	80211	2N3947
Q02	77147	TRANSSTR 2N3947 NPN SIL	80211	2N3947
Q03	77148	TRANSSTR 2N3251 PNP SIL	80211	2N3251
Q04	77147	TRANSSTR 2N3947 NPN SIL	80211	2N3947
Q05	78197	TRANSSTR 2N3866 NPN SIL	79089	2N3866
Q06	78600	NOT ASSIGNED		
Q07	78600	NOT ASSIGNED		
R01	77524	RESISTOR 75 OHM 1/4W 5% COMP	01121	RCR07G750JS
R02	71887	RESISTOR 100 OHM 1/4W 10% COMP	01121	RCR07G101KS
R03	71966	RESISTOR 1.5K OHM 1/4W 10% COMP	01121	RCR07G152KS
R04	71931	RESISTOR 560 OHM 1/4W 10% COMP	01121	RCR07G561KS
R05	71887	RESISTOR 100 OHM 1/4W 10% COMP	01121	RCR07G101KS
R06	71907	RESISTOR 220 OHM 1/4W 10% COMP	01121	RCR07G221KS
R07	71982	RESISTOR 2.7K OHM 1/4W 10% COMP	01121	RCR07G272KS
R08	71887	RESISTOR 100 OHM 1/4W 10% COMP	01121	RCR07G101KS
R09	71938	RESISTOR 680 OHM 1/4W 10% COMP	01121	RCR07G681KS
R10	71887	RESISTOR 100 OHM 1/4W 10% COMP	01121	RCR07G101KS
R11	71901	RESISTOR 180 OHM 1/4W 10% COMP	01121	RCR07G181KS
R12	72011	RESISTOR 5.6K OHM 1/4W 10% COMP	01121	RCR07G562KS
R13	71887	RESISTOR 100 OHM 1/4W 10% COMP	01121	RCR07G101KS
R14	71887	RESISTOR 100 OHM 1/4W 10% COMP	01121	RCR07G101KS
R15	71887	RESISTOR 100 OHM 1/4W 10% COMP	01121	RCR07G101KS
R16	71951	RESISTOR 1.0K OHM 1/4W 10% COMP	01121	RCR07G102KS
R17	71887	RESISTOR 100 OHM 1/4W 10% COMP	01121	RCR07G101KS
R18	76274	RESISTOR 18 OHM 1/4W 10% COMP	01121	RCR07G180KS
R19	71887	RESISTOR 100 OHM 1/4W 10% COMP	01121	RCR07G101KS
R20	71966	RESISTOR 1.5K OHM 1/4W 10% COMP	01121	RCR07G152KS
R21	71887	RESISTOR 100 OHM 1/4W 10% COMP	01121	RCR07G101KS
R22	71989	RESISTOR 3.3K OHM 1/4W 10% COMP	01121	RCR07G332KS
R23	71887	RESISTOR 100 OHM 1/4W 10% COMP	01121	RCR07G101KS
R24	71966	RESISTOR 1.5K OHM 1/4W 10% COMP	01121	RCR07G152KS
R25	71931	RESISTOR 560 OHM 1/4W 10% COMP	01121	RCR07G561KS
R26	76274	RESISTOR 18 OHM 1/4W 10% COMP	01121	RCR07G180KS
R27	71897	RESISTOR 150 OHM 1/4W 10% COMP	01121	RCR07G151KS
R28	71989	RESISTOR 3.3K OHM 1/4W 10% COMP	01121	RCR07G332KS
R29	71876	RESISTOR 68 OHM 1/4W 10% COMP	01121	RCR07G680KS
R30	71887	RESISTOR 100 OHM 1/4W 10% COMP	01121	RCR07G101KS
R31	76723	RESISTOR 39 OHM 1/4W 10% COMP	01121	RCR07G390KS
R32	71993	RESISTOR 3.9K OHM 1/4W 10% COMP	01121	RCR07G392KS

PARTS LIST

MODEL 6300 4.5 MHz CONVERTER -continued

COMP DESIG	S-A PART NUMBER	DESCRIPTION	FSCM	MFR PART NO.
R33	78724	POT 1K OHM 1/2W CERMET PC MT 3/8 DIA	01121	SV1021
R34	71887	RESISTOR 100 OHM 1/4W 10% COMP	01121	RCR07G101KS
R35	72026	RESISTOR 10K OHM 1/4W 10% COMP	01121	RCR07G103KS
R36	71887	RESISTOR 100 OHM 1/4W 10% COMP	01121	RCR07G101KS
R37	71907	RESISTOR 220 OHM 1/4W 10% COMP	01121	RCR07G221KS
R38	71989	RESISTOR 3.3K OHM 1/4W 10% COMP	01121	RCR07G332KS
R39	71931	RESISTOR 560 OHM 1/4W 10% COMP	01121	RCR07G561KS
R40	77524	RESISTOR 75 OHM 1/4W 5% COMP	01121	RCR07G750JS
R41	71977	RESISTOR 2.2K OHM 1/4W 10% COMP	01121	RCR07G222KS
R42	78700	FACTORY SELECTED VALUE		
R43	74706	RESISTOR 1.5K OHM 1/4W 5% COMP	01121	RCR07G152JS
R44				
R45	71951	RESISTOR 1.0K OHM 1/4W 10% COMP	01121	RCR07G102KS
R46	71941	RESISTOR 820 OHM 1/4W 10% COMP	01121	RCR07G821KS
R47	71887	RESISTOR 100 OHM 1/4W 10% COMP	01121	RCR07G101KS
R48	71853	RESISTOR 27 OHM 1/4W 10% COMP	01121	RCR07G270KS
R49	71887	RESISTOR 100 OHM 1/4W 10% COMP	01121	RCR07G101KS
R50	71853	RESISTOR 27 OHM 1/4W 10% COMP	01121	RCR07G270KS
R51	71920	RESISTOR 390 OHM 1/4W 10% COMP	01121	RCR07G391KS
R52	71879	RESISTOR 82 OHM 1/4W 10% COMP	01121	RCR07G820KS
R53	71887	RESISTOR 100 OHM 1/4W 10% COMP	01121	RCR07G101KS
R54	71887	RESISTOR 100 OHM 1/4W 10% COMP	01121	RCR07G101KS
R55	71887	RESISTOR 100 OHM 1/4W 10% COMP	01121	RCR07G101KS
R56	71887	RESISTOR 100 OHM 1/4W 10% COMP	01121	RCR07G101KS
R57	78600	NOT ASSIGNED		
R58	78600	NOT ASSIGNED		
T1	108840	TOROID 2 TURNS PRI 6 TURNS SEC		

PARTS LIST

MODEL 6300 MIDBAND OUTPUT CONVERTER

COMP DESIG	S-A PART NUMBER	DESCRIPTION	FSCM	MFR PART NO.
C01				
C02				
C03				
C04	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C05	70496	CAPACITR 43 PF 500V SILVER MICA 5%	14655	CD15ED430J03
C06	70496	CAPACITR 43 PF 500V SILVER MICA 5%	14655	CD15ED430J03
C07	77392	CAPACITR 15 PF 500V SILVER MICA 5%	84171	DM 15-150-J
C08	70470	CAPACITR 10 PF 500V SILVER MICA 5%	14655	CD15CD100J03
C09	81569	CAPACITR 2-18 PF 250V PC MT	73445	2222-809-09003
C10	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C11	77392	CAPACITR 15 PF 500V SILVER MICA 5%	84171	DM 15-150-J
C12	81570	CAPACITR 5-60 PF 250V PC MT	73445	2222-809-08003
C13	70470	CAPACITR 10 PF 500V SILVER MICA 5%	14655	CD15CD100J03
C14	81569	CAPACITR 2-18 PF 250V PC MT	73445	2222-809-09003
C15	76380	CAPACITR 3 PF 500V CER TUBULAR	00656	CC20CJ030C
C16	81568	CAPACITR 2-9 PF 250V PC MT	73445	2222-809-09002
C17	75417	CAPACITR .01 MF 150V CER DISC	71590	DDM-103
C18	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C19	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C20	70531	CAPACITR 270 PF 500V SILVER MICA 5%	14655	CD15FD271J03
C21	81569	CAPACITR 2-18 PF 250V PC MT	73445	2222-809-09003
C22	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C23	77392	CAPACITR 15 PF 500V SILVER MICA 5%	84171	DM 15-150-J
C24	70522	CAPACITR 150 PF 500V SILVER MICA 5%	14655	CD15FD151J03
C25	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C26	73487	CAPACITR 2 PF 500V CER TUBULAR	00656	CC20CK020C
C27	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C28	77501	CAPACITR 2.2 PF 500V CER TUBULAR	00656	CC20CK2R2C
C29	81568	CAPACITR 2-9 PF 250V PC MT	73445	2222-809-09002
C30	71913	RESISTOR 270 OHM 1/4W 10% COMP	01121	RCR07G271KS
C31	81569	CAPACITR 2-18 PF 250V PC MT	73445	2222-809-09003
C32	77392	CAPACITR 15 PF 500V SILVER MICA 5%	84171	DM 15-150-J
C33	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C34	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C35	70470	CAPACITR 10 PF 500V SILVER MICA 5%	14655	CD15CD100J03
C36	70490	CAPACITR 30 PF 500V SILVER MICA 5%	14655	CD15ED300J03
C37	81569	CAPACITR 2-18 PF 250V PC MT	73445	2222-809-09003
C38	70531	CAPACITR 270 PF 500V SILVER MICA 5%	14655	CD15FD271J03
C39	81569	CAPACITR 2-18 PF 250V PC MT	73445	2222-809-09003
C40	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C41	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C42	73487	CAPACITR 2 PF 500V CER TUBULAR	00656	CC20CK020C
C43	70531	CAPACITR 270 PF 500V SILVER MICA 5%	14655	CD15FD271J03
C44	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C45	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C46	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C47	75417	CAPACITR .01 MF 150V CER DISC	71590	DDM-103
C48	81569	CAPACITR 2-18 PF 250V PC MT	73445	2222-809-09003
C49	70624	CAPACITR 4 PF 500V CER TUBULAR	00656	CC20CH040C
C50	70624	CAPACITR 4 PF 500V CER TUBULAR	00656	CC20CH040C
C51	81570	CAPACITR 5-60 PF 250V PC MT	73445	2222-809-08003
C52	73495	CAPACITR 39 PF 500V SILVER MICA 5%	14655	CD15ED390J03
C53	70624	CAPACITR 4 PF 500V CER TUBULAR	00656	CC20CH040C
C54	70624	CAPACITR 4 PF 500V CER TUBULAR	00656	CC20CH040C
C55	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C56	73487	CAPACITR 2 PF 500V CER TUBULAR	00656	CC20CK020C
C57	78600	NOT ASSIGNED		
C58	78600	NOT ASSIGNED		
L01				
L02				
L03				
L04				

PARTS LIST

MODEL 6300 MIDBAND OUTPUT CONVERTER -continued

COMP DESIG	S-A PART NUMBER	DESCRIPTION	FSCM	MFR PART NO.
L05	108861	TOROID 5 TURNS BIFILAR WOUND		
L06	108862	TOROID 37.5 OHMS TO 75 OHMS		
L07	116512	IDCTR CLOSEWOUND 14T .15ID		
L08	77484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	76493	70F156A1
L09	116511	IDCTR CLOSEWOUND 6T .15ID		
L10	78200	INDUCTOR .1 UH SUBMIN SHLD ENCAP 10%	72259	WEE-WEE .1
L11	116511	IDCTR CLOSEWOUND 6T .15ID		
L12	78200	INDUCTOR .1 UH SUBMIN SHLD ENCAP 10%	72259	WEE-WEE .1
L13	77484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	76493	70F156A1
L14	78200	INDUCTOR .1 UH SUBMIN SHLD ENCAP 10%	72259	WEE-WEE .1
L15	77484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	76493	70F156A1
L16	77484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	76493	70F156A1
L17	78200	INDUCTOR .1 UH SUBMIN SHLD ENCAP 10%	72259	WEE-WEE .1
L18	78200	INDUCTOR .1 UH SUBMIN SHLD ENCAP 10%	72259	WEE-WEE .1
L19	108861	TOROID 5 TURNS BIFILAR WOUND		
L20	77484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	76493	70F156A1
L21	108862	TOROID 37.5 OHMS TO 75 OHMS		
L22	77484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	76493	70F156A1
L23	78200	INDUCTOR .1 UH SUBMIN SHLD ENCAP 10%	72259	WEE-WEE .1
L24	77484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	76493	70F156A1
L25	77484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	76493	70F156A1
L26	108861	TOROID 5 TURNS BIFILAR WOUND		
L27	108862	TOROID 37.5 OHMS TO 75 OHMS		
L28	78200	INDUCTOR .1 UH SUBMIN SHLD ENCAP 10%	72259	WEE-WEE .1
L29	78600	NOT ASSIGNED		
L30	78600	NOT ASSIGNED		
Q01	81560	TRANSSTR 2N5943 NPN SIL	80211	2N5943
Q02	35669	TRANSSTR 2N5179 SIL NPN	80211	2N5179
Q03	81560	TRANSSTR 2N5943 NPN SIL	80211	2N5943
Q04	35669	TRANSSTR 2N5179 SIL NPN	80211	2N5179
Q05	81560	TRANSSTR 2N5943 NPN SIL	80211	2N5943
Q06	78600	NOT ASSIGNED		
Q07	78600	NOT ASSIGNED		
R01	71897	RESISTOR 150 OHM 1/4W 10% COMP	01121	RCR07G151KS
R02	76282	RESISTOR 4.7 OHM 1/4W 10% COMP	01121	RCR07G4R7KS
R03	71938	RESISTOR 680 OHM 1/4W 10% COMP	01121	RCR07G621KS
R04	76282	RESISTOR 4.7 OHM 1/4W 10% COMP	01121	RCR07G4R7KS
R05	76277	RESISTOR 12 OHM 1/4W 10% COMP	01121	RCR07G120KS
R06	71907	RESISTOR 220 OHM 1/4W 10% COMP	01121	RCR07G221KS
R07	76277	RESISTOR 12 OHM 1/4W 10% COMP	01121	RCR07G120KS
R08	72019	RESISTOR 8.2K OHM 1/4W 10% COMP	01121	RCR07G822KS
R09	71989	RESISTOR 3.3K OHM 1/4W 10% COMP	01121	RCR07G332KS
R10	71887	RESISTOR 100 OHM 1/4W 10% COMP	01121	RCR07G101KS
R11	71913	RESISTOR 270 OHM 1/4W 10% COMP	01121	RCR07G271KS
R12	71938	RESISTOR 680 OHM 1/4W 10% COMP	01121	RCR07G621KS
R13	71938	RESISTOR 680 OHM 1/4W 10% COMP	01121	RCR07G621KS
R14	72019	RESISTOR 8.2K OHM 1/4W 10% COMP	01121	RCR07G822KS
R15	71989	RESISTOR 3.3K OHM 1/4W 10% COMP	01121	RCR07G332KS
R16	72019	RESISTOR 8.2K OHM 1/4W 10% COMP	01121	RCR07G822KS
R17	71907	RESISTOR 220 OHM 1/4W 10% COMP	01121	RCR07G221KS
R18	71989	RESISTOR 3.3K OHM 1/4W 10% COMP	01121	RCR07G332KS
R19	71938	RESISTOR 680 OHM 1/4W 10% COMP	01121	RCR07G621KS
R20	76276	RESISTOR 15 OHM 1/4W 10% COMP	01121	RCR07G150KS
R21	71894	RESISTOR 120 OHM 1/4W 10% COMP	01121	RCR07G121KS
R22	71951	RESISTOR 1.0K OHM 1/4W 10% COMP	01121	RCR07G102KS
R23	71862	RESISTOR 47 OHM 1/4W 10% COMP	01121	RCR07G470KS
R24	71973	RESISTOR 1.8K OHM 1/4W 10% COMP	01121	RCR07G182KS
R25	71907	RESISTOR 220 OHM 1/4W 10% COMP	01121	RCR07G221KS
R26	71977	RESISTOR 2.2K OHM 1/4W 10% COMP	01121	RCR07G222KS
R27	72019	RESISTOR 8.2K OHM 1/4W 10% COMP	01121	RCR07G822KS
R28	71989	RESISTOR 3.3K OHM 1/4W 10% COMP	01121	RCR07G332KS
R29	72011	RESISTOR 5.6K OHM 1/4W 10% COMP	01121	RCR07G562KS

PARTS LIST

MODEL 6300 MIDBAND OUTPUT CONVERTER -continued

COMP DESIG	S-A PART NUMBER	DESCRIPTION	FSCM	MFR PART NO.
R30	76276	RESISTOR 15 OHM 1/4W 10% COMP	01121	RCR07G150KS
R31	71876	RESISTOR 68 OHM 1/4W 10% COMP	01121	RCR07G680KS
R32	71920	RESISTOR 390 OHM 1/4W 10% COMP	01121	RCR07G391KS
R33	77524	RESISTOR 75 OHM 1/4W 5% COMP	01121	RCR07G750JS
R34	78600	NOT ASSIGNED		
R35	78600	NOT ASSIGNED		
TP1	76489	JACK TEST RED	74970	105-852
TP2	76491	JACK TEST BLACK	74970	105-853
TP3	76491	JACK TEST BLACK	74970	105-853
TP4	76492	JACK TEST ORANGE	74970	105-856
TP5	78600	NOT ASSIGNED		
TP6	78600	NOT ASSIGNED		
U1	81148	DIODE M6K DOUBLE BALANCED MIXER	27956	MODEL M6K

PARTS LIST

MODEL 6300 OUTPUT CONVERTER ASSEMBLY,
CHANNELS 7 through 13

COMP DESIG	S-A PART NUMBER	DESCRIPTION	FSCM	MFR PART NO.
C01				
C01	73497	CAPACITR 180 PF 500V SILVER MICA 5%	14655	CD15FD181J03
C02				
C02	73497	CAPACITR 180 PF 500V SILVER MICA 5%	14655	CD15FD181J03
C03	70624	CAPACITR 4 PF 500V CER TUBULAR	00656	CC20CH040C
C03	80142	CAPACITR 20 PF 500V SILVER MICA 5%	14655	CD15ED200J
C04				
C04	80142	CAPACITR 20 PF 500V SILVER MICA 5%	14655	CD15ED200J
C05	73487	CAPACITR 2 PF 500V CER TUBULAR	00656	CC20CK020C
C05	73496	CAPACITR 56 PF 500V SILVER MICA 5%	14655	CD15ED560J03
C06	80142	CAPACITR 20 PF 500V SILVER MICA 5%	14655	CD15ED200J
C06	77510	CAPACITR 5 PF 500V CER TUBULAR	00656	CC20CH050C
C07	80142	CAPACITR 20 PF 500V SILVER MICA 5%	14655	CD15ED200J
C07				
C08				
C08	73496	CAPACITR 56 PF 500V SILVER MICA 5%	14655	CD15ED560J03
C09				
C09	73487	CAPACITR 2 PF 500V CER TUBULAR	00656	CC20CK020C
C10	70508	CAPACITR 62 PF 500V SILVER MICA 5%	14655	CD15ED620J03
C10				
C11	70508	CAPACITR 62 PF 500V SILVER MICA 5%	14655	CD15ED620J03
C11				
C12				
C12	73488	CAPACITR 6 PF 500V CER TUBULAR	00656	CC20CH060C
C13				
C13	80142	CAPACITR 20 PF 500V SILVER MICA 5%	14655	CD15ED200J
C14				
C14	80142	CAPACITR 20 PF 500V SILVER MICA 5%	14655	CD15ED200J
C15	73497	CAPACITR 180 PF 500V SILVER MICA 5%	14655	CD15FD181J03
C15	80142	CAPACITR 20 PF 500V SILVER MICA 5%	14655	CD15ED200J
C16	73497	CAPACITR 180 PF 500V SILVER MICA 5%	14655	CD15FD181J03

PARTS LIST

MODEL 6300 OUTPUT CONVERTER ASSEMBLY,
CHANNELS 7 through 13-cont.

COMP DESIG	S-A PART NUMBER	DESCRIPTION	FSCM	MFR PART NO.
C16	80142	CAPACITR 20 PF 500V SILVER MICA 5%	14655	CD15ED200J
C17				
C17	70496	CAPACITR 43 PF 500V SILVER MICA 5%	14655	CD15ED430J03
C18	73487	CAPACITR 2 PF 500V CER TUBULAR	00656	CC20CK020C
C18	70496	CAPACITR 43 PF 500V SILVER MICA 5%	14655	CD15ED430J03
C19	73497	CAPACITR 180 PF 500V SILVER MICA 5%	14655	CD15FD181J03
C19	70470	CAPACITR 10 PF 500V SILVER MICA 5%	14655	CD15CD100J03
C20	79171	CAPACITR 9-35 PF MIN CER DISC PC MT	72982	538-011 D 9-35
C20	70470	CAPACITR 10 PF 500V SILVER MICA 5%	14655	CD15CD100J03
C21	73497	CAPACITR 180 PF 500V SILVER MICA 5%	14655	CD15FD181J03
C21				
C22	73497	CAPACITR 180 PF 500V SILVER MICA 5%	14655	CD15FD181J03
C22				
C23	77501	CAPACITR 2.2 PF 500V CER TUBULAR	00656	CC20CK2R2C
C23				
C24	73497	CAPACITR 180 PF 500V SILVER MICA 5%	14655	CD15FD181J03
C24				
C25				
C25				
C26				
C26				
C27	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C27				
C28	73497	CAPACITR 180 PF 500V SILVER MICA 5%	14655	CD15FD181J03
C28	76379	CAPACITR 7 PF 500V CER TUBULAR	00656	CC20CH070C
C29	79143	CAPACITR 2-8 PF MIN CER DISC PC MT	72982	538-011 A 2-8
C29	73492	CAPACITR 15 PF 500V SILVER MICA 5%	00656	ADM15C150J500
C30	73487	CAPACITR 2 PF 500V CER TUBULAR	00656	CC20CK020C
C30	70624	CAPACITR 4 PF 500V CER TUBULAR	00656	CC20CH040C
C31	79143	CAPACITR 2-8 PF MIN CER DISC PC MT	72982	538-011 A 2-8
C31	78976	CAPACITR 15-60 PF MIN CER DISC PC MT	72982	538-011 F 15-60
C32	76381	CAPACITR 1.5 PF 500V CER TUBULAR	00656	CC20CK1R5C
C32	79172	CAPACITR 5.5-18 PF MIN CER DISC PC MT	72982	538-011 A 5.5-18
C33				
C33	73492	CAPACITR 15 PF 500V SILVER MICA 5%	00656	ADM15C150J500
C34	76382	CAPACITR .75 PF 500V CER TUBULAR	00656	CC20CK75C
C34	76380	CAPACITR 3 PF 500V CER TUBULAR	00656	CC20CJ030C
C35	73497	CAPACITR 180 PF 500V SILVER MICA 5%	14655	CD15FD181J03
C35				
C36				
C36				
C37	73497	CAPACITR 180 PF 500V SILVER MICA 5%	14655	CD15FD181J03
C37	79172	CAPACITR 5.5-18 PF MIN CER DISC PC MT	72982	538-011 A 5.5-18
C38	73497	CAPACITR 180 PF 500V SILVER MICA 5%	14655	CD15FD181J03
C38				
C39				
C39	81125	CAPACITR .25-1.5 PF TEFLON TRIMMER PC MT	72982	530-000
C40	73497	CAPACITR 180 PF 500V SILVER MICA 5%	14655	CD15FD181J03
C40				
C41	73497	CAPACITR 180 PF 500V SILVER MICA 5%	14655	CD15FD181J03
C41	77498	CAPACITR 1.2 PF 500V CER TUBULAR	00656	CC20CK1R2C
C42	73497	CAPACITR 180 PF 500V SILVER MICA 5%	14655	CD15FD181J03
C42	79171	CAPACITR 9-35 PF MIN CER DISC PC MT	72982	538-011 D 9-35
C43	79172	CAPACITR 5.5-18 PF MIN CER DISC PC MT	72982	538-011 A 5.5-18
C43				
C44	73497	CAPACITR 180 PF 500V SILVER MICA 5%	14655	CD15FD181J03
C44	70470	CAPACITR 10 PF 500V SILVER MICA 5%	14655	CD15CD100J03
C45	73497	CAPACITR 180 PF 500V SILVER MICA 5%	14655	CD15FD181J03
C45	78976	CAPACITR 15-60 PF MIN CER DISC PC MT	72982	538-011 F 15-60
C46	73492	CAPACITR 15 PF 500V SILVER MICA 5%	00656	ADM15C150J500
C46	70470	CAPACITR 10 PF 500V SILVER MICA 5%	14655	CD15CD100J03
C47	81125	CAPACITR .25-1.5 PF TEFLON TRIMMER PC MT	72982	530-000

PARTS LIST

MODEL 6300 OUTPUT CONVERTER ASSEMBLY,
CHANNELS 7 through 13-cont.

COMP DESIG	S-A PART NUMBER	DESCRIPTION	FSCM	MFR PART NO.
C47	79172	CAPACITR 5.5-18 PF MIN CER DISC PC MT	72982	538-011 A 5.5-18
C48				
C48	73492	CAPACITR 15 PF 500V SILVER MICA 5%	00656	ADM15C150J500
C49	79143	CAPACITR 2-8 PF MIN CER DISC PC MT	72982	538-011 A 2-8
C49	78600	NOT ASSIGNED		
C50	77365	CAPACITR 6 PF 500V SILVER MICA +-1PF	14655	CD6CD060C03
C50	78600	NOT ASSIGNED		
C51	79143	CAPACITR 2-8 PF MIN CER DISC PC MT	72982	538-011 A 2-8
C52				
C53	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C54	73497	CAPACITR 180 PF 500V SILVER MICA 5%	14655	CD15FD181J03
C55	70549	CAPACITR .0015 MF 1KV CER DISC	71590	DD152G
C56	73497	CAPACITR 180 PF 500V SILVER MICA 5%	14655	CD15FD181J03
C57				
C58				
C59	73497	CAPACITR 180 PF 500V SILVER MICA 5%	14655	CD15FD181J03
C60	73497	CAPACITR 180 PF 500V SILVER MICA 5%	14655	CD15FD181J03
DBM1	81148	DIODE M6K DOUBLE BALANCED MIXER	27956	MODEL M6K
DBM2	81148	DIODE M6K DOUBLE BALANCED MIXER	27956	MODEL M6K
DBM3	78600	NOT ASSIGNED		
DBM4	78600	NOT ASSIGNED		
L01	108856	INDUCTOR FIXED 10 TURNS .20 DIA		
L01	98414	INDUCTOR VARIABLE 5.75 TURNS -YEL-		
L02	105205	INDUCTOR VARIABLE 4.75 TURNS BLK-RED		
L02	108857	INDUCTOR FIXED 9 TURNS .20 DIA		
L03	108856	INDUCTOR FIXED 10 TURNS .20 DIA		
L03	108856	INDUCTOR FIXED 10 TURNS .20 DIA		
L04	108858	INDUCTOR FIXED 14 TURNS .20 DIA		
L04	108856	INDUCTOR FIXED 10 TURNS .20 DIA		
L05	108857	INDUCTOR FIXED 9 TURNS .20 DIA		
L05	108858	INDUCTOR FIXED 14 TURNS .20 DIA		
L06	108858	INDUCTOR FIXED 14 TURNS .20 DIA		
L06	108858	INDUCTOR FIXED 14 TURNS .20 DIA		
L07	108858	INDUCTOR FIXED 14 TURNS .20 DIA		
L07	108858	INDUCTOR FIXED 14 TURNS .20 DIA		
L08	108858	INDUCTOR FIXED 14 TURNS .20 DIA		
L08	108858	INDUCTOR FIXED 14 TURNS .20 DIA		
L09	108856	INDUCTOR FIXED 10 TURNS .20 DIA		
L09	98414	INDUCTOR VARIABLE 5.75 TURNS -YEL-		
L10	108856	INDUCTOR FIXED 10 TURNS .20 DIA		
L10	108856	INDUCTOR FIXED 10 TURNS .20 DIA		
L11				
L11	108856	INDUCTOR FIXED 10 TURNS .20 DIA		
L12	105199	INDUCTOR VARIABLE 2.25 TURNS -GRAY-		
L12	108857	INDUCTOR FIXED 9 TURNS .20 DIA		
L13	105199	INDUCTOR VARIABLE 2.25 TURNS -GRAY-		
L13	108857	INDUCTOR FIXED 9 TURNS .20 DIA		
L14	108863	INDUCTOR FIXED 4 TURNS .20 DIA		
L14	108857	INDUCTOR FIXED 9 TURNS .20 DIA		
L15	105199	INDUCTOR VARIABLE 2.25 TURNS -GRAY-		
L15	108857	INDUCTOR FIXED 9 TURNS .20 DIA		
L16	105199	INDUCTOR VARIABLE 2.25 TURNS -GRAY-		
L16	111256	INDUCTOR VARIABLE 7.75 TURNS BLK BRN		
L17	108863	INDUCTOR FIXED 4 TURNS .20 DIA		
L17	111256	INDUCTOR VARIABLE 7.75 TURNS BLK BRN		
L18	105199	INDUCTOR VARIABLE 2.25 TURNS -GRAY-		
L18	108859	INDUCTOR FIXED 6 TURNS .20 DIA		
L19	105199	INDUCTOR VARIABLE 2.25 TURNS -GRAY-		
L19	111256	INDUCTOR VARIABLE 7.75 TURNS BLK BRN		
L20	105199	INDUCTOR VARIABLE 2.25 TURNS -GRAY-		
L20	108859	INDUCTOR FIXED 6 TURNS .20 DIA		
L21	105199	INDUCTOR VARIABLE 2.25 TURNS -GRAY-		

PARTS LIST

MODEL 6300 OUTPUT CONVERTER ASSEMBLY,
CHANNELS 7 through 13-cont.

COMP DESIG	S-A PART NUMBER	DESCRIPTION	FSCM	MFR PART NO.
L21	108861	TOROID 5 TURNS BIFILAR WOUND		
L22	108861	TOROID 5 TURNS BIFILAR WOUND		
L22	111256	INDUCTOR VARIABLE 7.75 TURNS BLK BRN		
L23	108861	TOROID 5 TURNS BIFILAR WOUND		
L23	111256	INDUCTOR VARIABLE 7.75 TURNS BLK BRN		
L24	108862	TOROID 37.5 OHMS TO 75 OHMS		
L24	111256	INDUCTOR VARIABLE 7.75 TURNS BLK BRN		
L25	105199	INDUCTOR VARIABLE 2.25 TURNS -GRAY-		
L25	108861	TOROID 5 TURNS BIFILAR WOUND		
L26	78600	NOT ASSIGNED		
L26	108862	TOROID 37.5 OHMS TO 75 OHMS		
L27	78600	NOT ASSIGNED		
L27	78600	NOT ASSIGNED		
L28	78600	NOT ASSIGNED		
Q01	77531	TRANSSTR 2N4995 NPN SIL		2N4995
Q01	77531	TRANSSTR 2N4995 NPN SIL		2N4995
Q02	77557	TRANSSTR MPS-6507 NPN SIL RF	80211	MPS-6507
Q02	77532	TRANSSTR MPS-6511 NPN SIL RF	80211	MPS-6511
Q03	81123	TRANSSTR MPS-6542 NPN SIL	80211	MPS-6542
Q03	77532	TRANSSTR MPS-6511 NPN SIL RF	80211	MPS-6511
Q04	81123	TRANSSTR MPS-6542 NPN SIL	80211	MPS-6542
Q04	77532	TRANSSTR MPS-6511 NPN SIL RF	80211	MPS-6511
Q05	77557	TRANSSTR MPS-6507 NPN SIL RF	80211	MPS-6507
Q05	78173	TRANSSTR 2N4072 NPN SIL	80211	2N4072
Q06	77532	TRANSSTR MPS-6511 NPN SIL RF	80211	MPS-6511
Q06				
Q07	77532	TRANSSTR MPS-6511 NPN SIL RF	80211	MPS-6511
Q07				
Q08	78173	TRANSSTR 2N4072 NPN SIL	80211	2N4072
Q08	78173	TRANSSTR 2N4072 NPN SIL	80211	2N4072
Q09	78173	TRANSSTR 2N4072 NPN SIL	80211	2N4072
Q09	78600	NOT ASSIGNED		
Q10	78600	NOT ASSIGNED		
Q10	78600	NOT ASSIGNED		
Q11	78600	NOT ASSIGNED		
R01	71989	RESISTOR 3.3K OHM 1/4W 10% COMP	01121	RCR07G332KS
R01	72011	RESISTOR 5.6K OHM 1/4W 10% COMP	01121	RCR07G562KS
R02	72011	RESISTOR 5.6K OHM 1/4W 10% COMP	01121	RCR07G562KS
R02	71989	RESISTOR 3.3K OHM 1/4W 10% COMP	01121	RCR07G332KS
R03	71966	RESISTOR 1.5K OHM 1/4W 10% COMP	01121	RCR07G152KS
R03	71879	RESISTOR 82 OHM 1/4W 10% COMP	01121	RCR07G820KS
R04				
R04	71966	RESISTOR 1.5K OHM 1/4W 10% COMP	01121	RCR07G152KS
R05	71926	RESISTOR 470 OHM 1/4W 10% COMP	01121	RCR07G471KS
R05	71973	RESISTOR 1.8K OHM 1/4W 10% COMP	01121	RCR07G182KS
R06	71879	RESISTOR 82 OHM 1/4W 10% COMP	01121	RCR07G820KS
R06	71973	RESISTOR 1.8K OHM 1/4W 10% COMP	01121	RCR07G182KS
R07	71876	RESISTOR 68 OHM 1/4W 10% COMP	01121	RCR07G680KS
R07	71897	RESISTOR 150 OHM 1/4W 10% COMP	01121	RCR07G151KS
R08	71879	RESISTOR 82 OHM 1/4W 10% COMP	01121	RCR07G820KS
R08	71941	RESISTOR 820 OHM 1/4W 10% COMP	01121	RCR07G821KS
R09	71862	RESISTOR 47 OHM 1/4W 10% COMP	01121	RCR07G470KS
R09	71879	RESISTOR 82 OHM 1/4W 10% COMP	01121	RCR07G820KS
R10	71876	RESISTOR 68 OHM 1/4W 10% COMP	01121	RCR07G680KS
R10	71887	RESISTOR 100 OHM 1/4W 10% COMP	01121	RCR07G101KS
R11	72002	RESISTOR 4.7K OHM 1/4W 10% COMP	01121	RCR07G472KS
R11	71887	RESISTOR 100 OHM 1/4W 10% COMP	01121	RCR07G101KS
R12				
R12	71879	RESISTOR 82 OHM 1/4W 10% COMP	01121	RCR07G820KS
R13				
R13	76277	RESISTOR 12 OHM 1/4W 10% COMP	01121	RCR07G120KS
R14	71876	RESISTOR 68 OHM 1/4W 10% COMP	01121	RCR07G680KS

PARTS LIST

MODEL 6300 OUTPUT CONVERTER ASSEMBLY,
CHANNELS 7 through 13-cont.

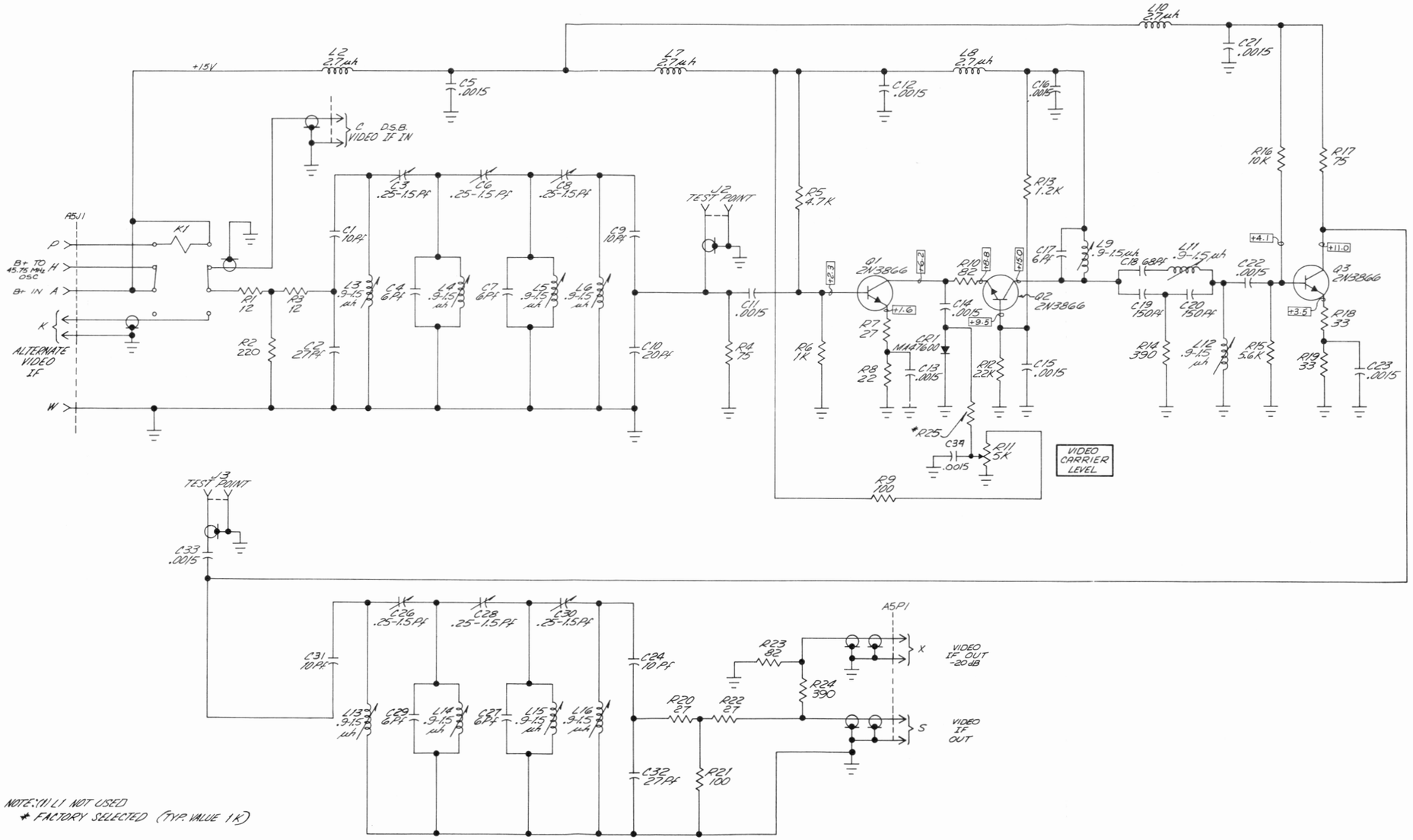
COMP DESIG	S-A PART NUMBER	DESCRIPTION	FSCM	MFR PART NO.
R14	71951	RESISTOR 1.0K OHM 1/4W 10% COMP	01121	RCR07G102KS
R15	72002	RESISTOR 4.7K OHM 1/4W 10% COMP	01121	RCR07G472KS
R15	71879	RESISTOR 82 OHM 1/4W 10% COMP	01121	RCR07G820KS
R16				
R16	71879	RESISTOR 82 OHM 1/4W 10% COMP	01121	RCR07G820KS
R17	71907	RESISTOR 220 OHM 1/4W 10% COMP	01121	RCR07G221KS
R17	71941	RESISTOR 820 OHM 1/4W 10% COMP	01121	RCR07G821KS
R18	71862	RESISTOR 47 OHM 1/4W 10% COMP	01121	RCR07G470KS
R18	76277	RESISTOR 12 OHM 1/4W 10% COMP	01121	RCR07G120KS
R19				
R19	71951	RESISTOR 1.0K OHM 1/4W 10% COMP	01121	RCR07G102KS
R20	71966	RESISTOR 1.5K OHM 1/4W 10% COMP	01121	RCR07G152KS
R20	71879	RESISTOR 82 OHM 1/4W 10% COMP	01121	RCR07G820KS
R21	71907	RESISTOR 220 OHM 1/4W 10% COMP	01121	RCR07G221KS
R21	71897	RESISTOR 150 OHM 1/4W 10% COMP	01121	RCR07G151KS
R22	71876	RESISTOR 68 OHM 1/4W 10% COMP	01121	RCR07G680KS
R22	71887	RESISTOR 100 OHM 1/4W 10% COMP	01121	RCR07G101KS
R23	71973	RESISTOR 1.8K OHM 1/4W 10% COMP	01121	RCR07G182KS
R23	71879	RESISTOR 82 OHM 1/4W 10% COMP	01121	RCR07G820KS
R24	76274	RESISTOR 18 OHM 1/4W 10% COMP	01121	RCR07G180KS
R24	71897	RESISTOR 150 OHM 1/4W 10% COMP	01121	RCR07G151KS
R25	71879	RESISTOR 82 OHM 1/4W 10% COMP	01121	RCR07G820KS
R25	71879	RESISTOR 82 OHM 1/4W 10% COMP	01121	RCR07G820KS
R26	71879	RESISTOR 82 OHM 1/4W 10% COMP	01121	RCR07G820KS
R26	71941	RESISTOR 820 OHM 1/4W 10% COMP	01121	RCR07G821KS
R27	71876	RESISTOR 68 OHM 1/4W 10% COMP	01121	RCR07G680KS
R27	71879	RESISTOR 82 OHM 1/4W 10% COMP	01121	RCR07G820KS
R28	71951	RESISTOR 1.0K OHM 1/4W 10% COMP	01121	RCR07G102KS
R28	71879	RESISTOR 82 OHM 1/4W 10% COMP	01121	RCR07G820KS
R29	71876	RESISTOR 68 OHM 1/4W 10% COMP	01121	RCR07G680KS
R29	72002	RESISTOR 4.7K OHM 1/4W 10% COMP	01121	RCR07G472KS
R30	71941	RESISTOR 820 OHM 1/4W 10% COMP	01121	RCR07G821KS
R30	71941	RESISTOR 820 OHM 1/4W 10% COMP	01121	RCR07G821KS
R31	71897	RESISTOR 150 OHM 1/4W 10% COMP	01121	RCR07G151KS
R31	76277	RESISTOR 12 OHM 1/4W 10% COMP	01121	RCR07G120KS
R32				
R32	71907	RESISTOR 220 OHM 1/4W 10% COMP	01121	RCR07G221KS
R33				
R33	76277	RESISTOR 12 OHM 1/4W 10% COMP	01121	RCR07G120KS
R34	71989	RESISTOR 3.3K OHM 1/4W 10% COMP	01121	RCR07G332KS
R34	71897	RESISTOR 150 OHM 1/4W 10% COMP	01121	RCR07G151KS
R35	71876	RESISTOR 68 OHM 1/4W 10% COMP	01121	RCR07G680KS
R35	71897	RESISTOR 150 OHM 1/4W 10% COMP	01121	RCR07G151KS
R36	78600	NOT ASSIGNED		
R36	71897	RESISTOR 150 OHM 1/4W 10% COMP	01121	RCR07G151KS
R37	78600	NOT ASSIGNED		
R37	71920	RESISTOR 390 OHM 1/4W 10% COMP	01121	RCRC7G391KS
R38	77524	RESISTOR 75 OHM 1/4W 5% COMP	01121	RCR07G750JS
R39	78600	NOT ASSIGNED		
R40	78600	NOT ASSIGNED		
Y01	77841	CRYSTAL 128.50 MC HC6/U HLDR	13454	TYPE IS
Y01	77831	CRYSTAL 101 MC HC6/U HLDR	13454	TYPE IS
Y02	78600	NOT ASSIGNED		
Y02	78600	NOT ASSIGNED		
Y03	78600	NOT ASSIGNED		
Y03	78600	NOT ASSIGNED		

MANUFACTURERS' CODES

FSCM	Manufacturer
00656	Aerovox
01121	Allen-Bradley
01295	Texas Instruments
02113	Coilcraft
04213	Caddell Burns Manufacturing
09021	Airco Speer Electric Components
13454	Texas Crystals Division, Whitehall Electronics
14655	Cornell-Dubilier
15605	Cutler-Hammer
24446	General Electric
27073	Sentry
27956	Relcom
28480	H-P Associates
71590	Centralab
72259	Nytronics
72982	Erie Resistor
73293	Electron Dynamics Division Hughes Aircraft
73445	Amperex Electronics
74970	E. F. Johnson
76493	J. W. Miller
77764	Resistance Products
79089	Radio Corporation of America
80183	Sprague Products
80211	Motorola
80368	Sylvania Electric Products
81413	Loral Electronics
82316	Gilbert Engineering
83186	Victory Engineering
84171	Arco Electronics
91637	Dale Products
96341	Microwave Associates

SECTION 8
DIAGRAMS

The schematic diagrams for the Scientific-Atlanta Model 6300 and 6301 CATV Modulators are presented in this section.



NOTE: (1) L1 NOT USED
* FACTORY SELECTED (TYP. VALUE 1K)

Figure 8-1. Model 6300 Vestigial Sideband Filter, Schematic Diagram

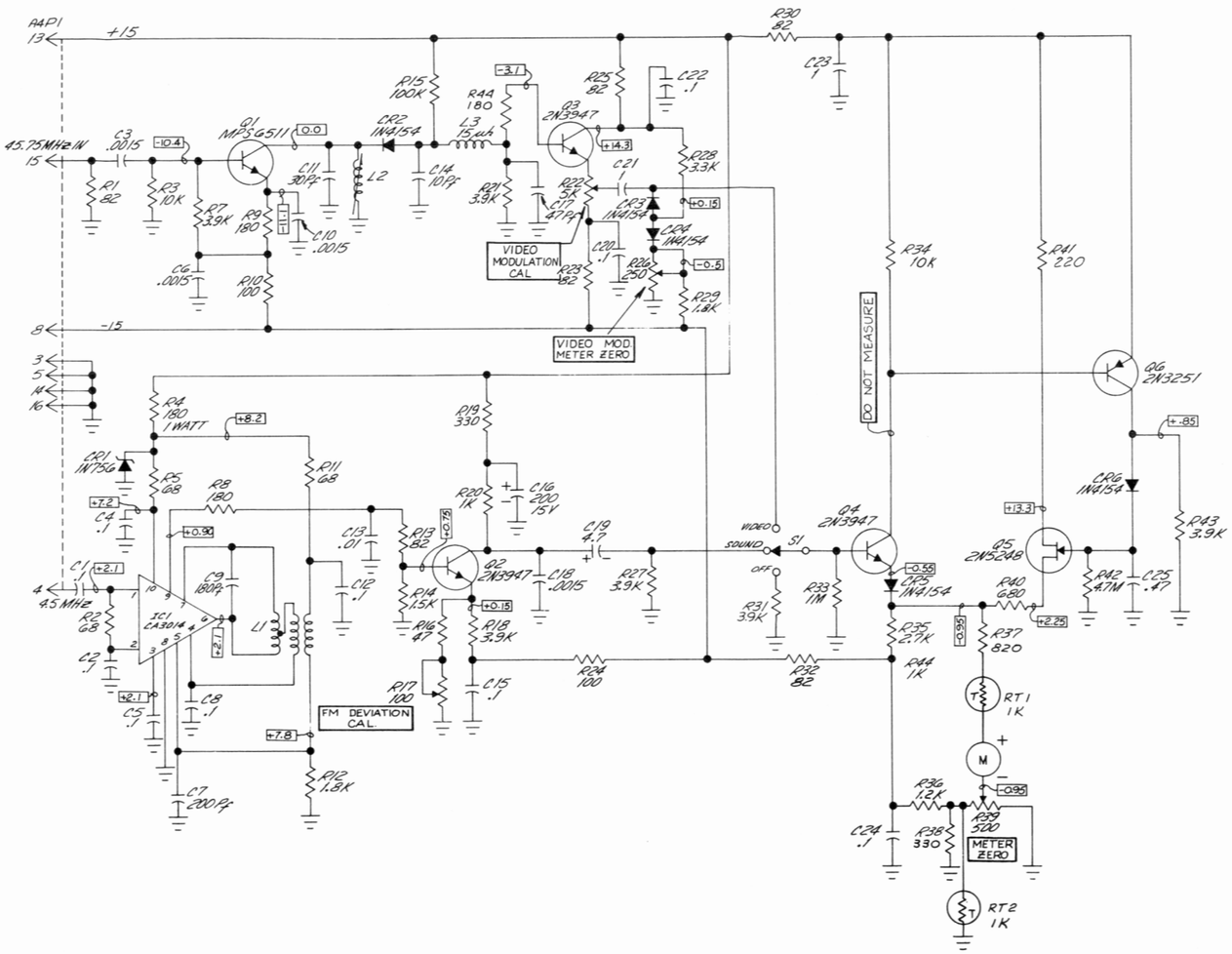
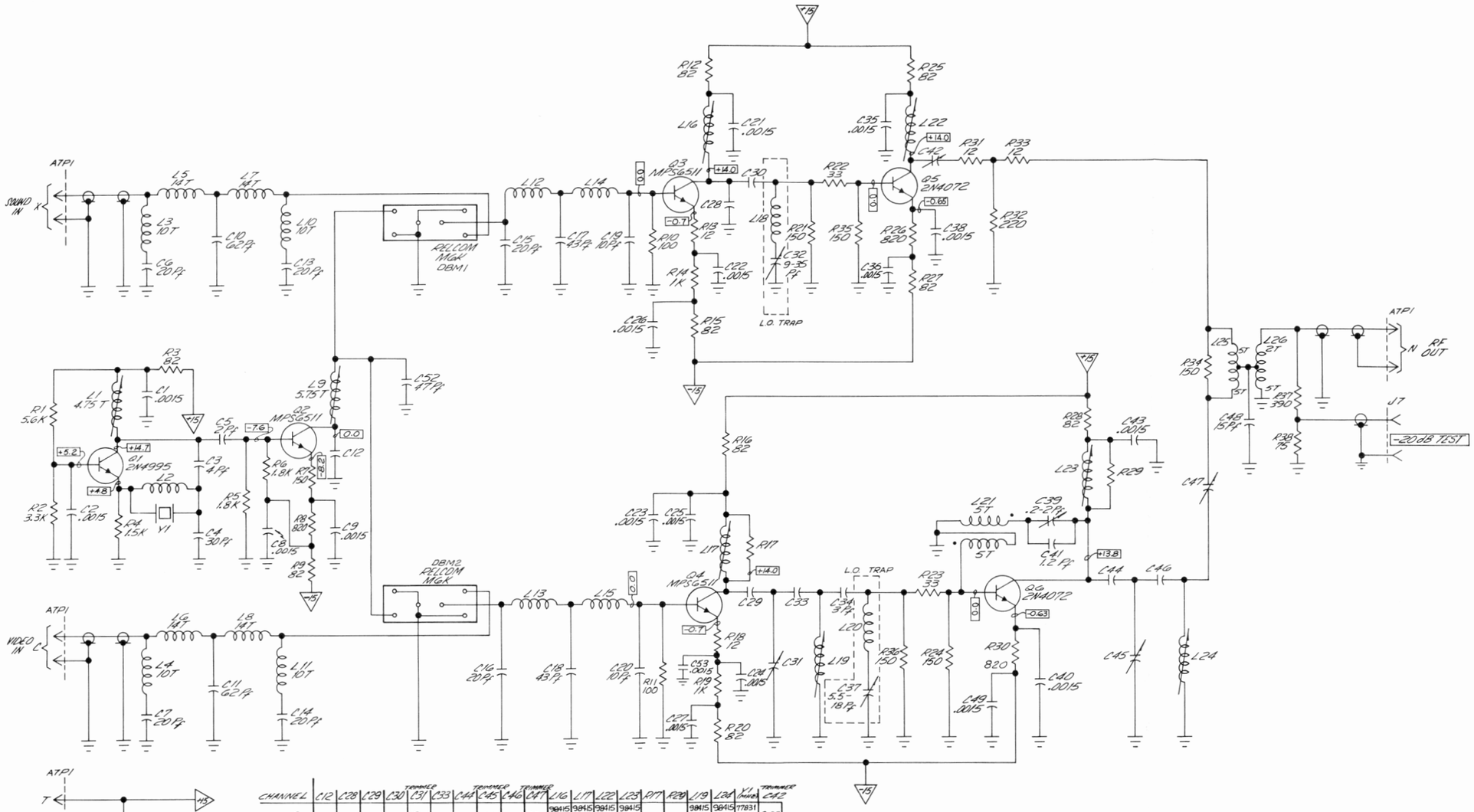
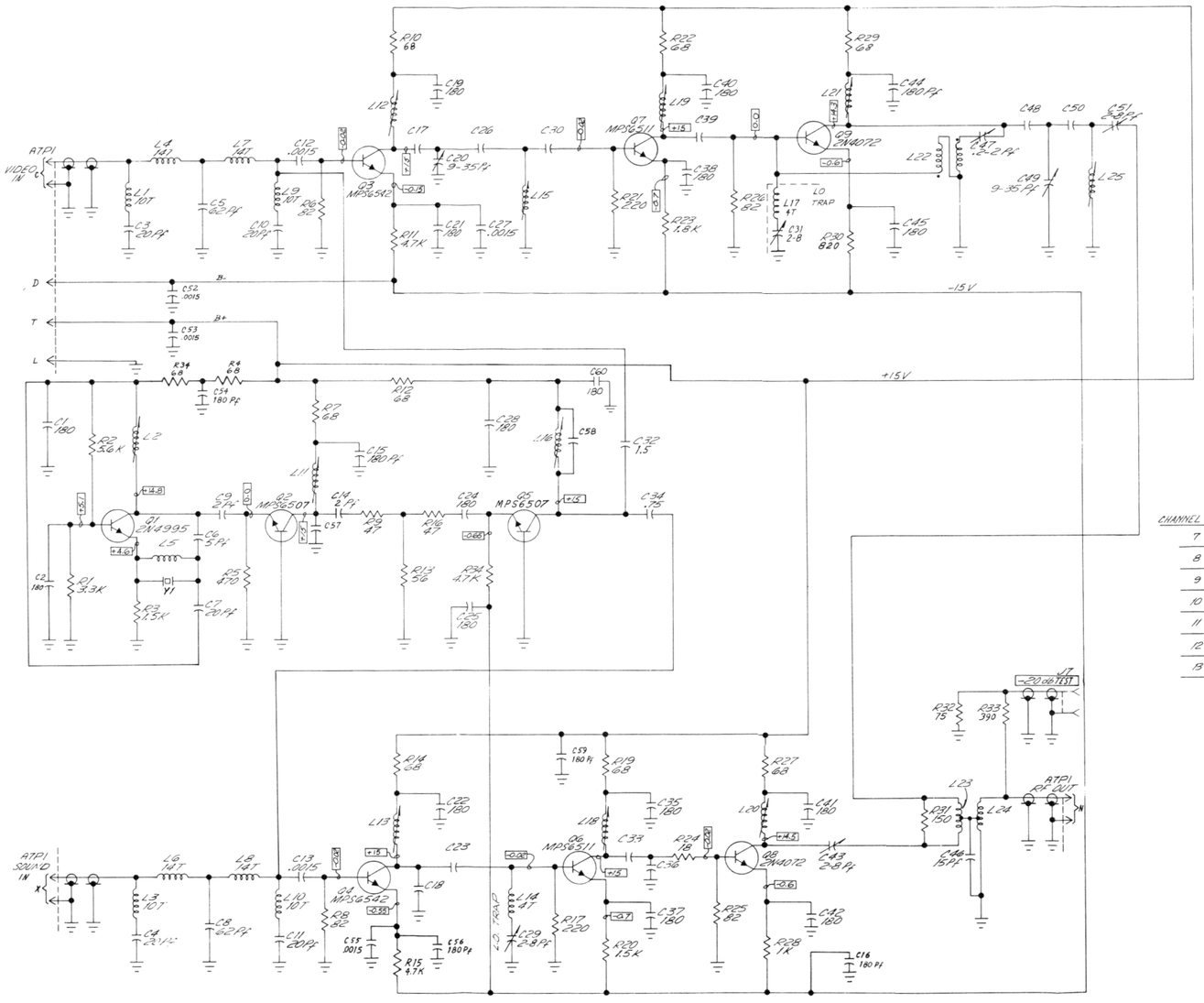


Figure 8-2. Model 6300 Meter Circuit, Schematic Diagram



CHANNEL	C12	C28	C29	C30	C31 TRIMMER	C33	C44	C45 TRIMMER	C46	C47 TRIMMER	L16	L17	L22	L25	R17	R28	L19	L24	Y1 MHz	C42 TRIMMER
2	6.8Pf	7.1Pf	8.8Pf	4.4Pf	15-60Pf	15.8Pf	10.8Pf	15-60 Pf	10.7Pf	5.5-18.7Pf	98415 GRN DOT	98415	98415 GRN DOT	98415 GRN DOT	820	4.7K	98415 GRN DOT	98415 GRN DOT	77831 101	9-35 Pf
3	6.8Pf	7.1Pf	8.8Pf	4.4Pf	15-60Pf	15.8Pf	10.8Pf	15-60 Pf	10.7Pf	5.5-18.7Pf	98416 BLU DOT	98416 BLU DOT	98416 BLU DOT	98416 BLU DOT	1.5K	1.8K	98416 BLU DOT	98416 BLU DOT	77832 107	9-35 Pf
4	6.8Pf	4.1Pf	12.8Pf	4.4Pf	15-60Pf	12.8Pf	7.8Pf	9-35 Pf	7.7Pf	2-8 Pf	98416 BLU DOT	98416 BLU DOT	98416 BLU DOT	98416 BLU DOT	1.5K	2.2K	98416 BLU DOT	98416 BLU DOT	77834 113	5.5-18.7Pf
5	4.1Pf	4.1Pf	12.8Pf	4.4Pf	9-35 Pf	12.8Pf	7.8Pf	9-35 Pf	7.7Pf	2-8 Pf	98416 BLU DOT	98416 BLU DOT	98416 BLU DOT	98416 BLU DOT	1.5K	2.2K	98416 BLU DOT	98416 BLU DOT	77839 123	5.5-18.7Pf
6	3Pf	3.7Pf	8.7Pf	3.7Pf	9-35 Pf	8.7Pf	5.7Pf	9-35 Pf	5.7Pf	2-8 Pf	98416 BLU DOT	98416 BLU DOT	98416 BLU DOT	98416 BLU DOT	1.5K	2.2K	98416 BLU DOT	98416 BLU DOT	77842 129	5.5-18.7Pf

Figure 8-3. Model 6300 Output Converter, Channels 2 through 6, Schematic Diagram



CHANNEL	C17	C18	C23	C26	C30	C33	C36	C39	C48	C50	C57	C58	Y1
7	70470 10 PF	77365 6 PF	73486 1 PF	70470 10 PF	77501 22 PF	70470 10 PF	78165 30 PF	73491 10 PF	76379 7 PF	70470 10 PF	73487 2 PF	73486 1 PF	77833 183.5
8	73489 8 PF	77365 6 PF	73486 1 PF	70470 10 PF	77501 22 PF	70470 10 PF	78165 30 PF	73491 10 PF	77365 6 PF	70470 10 PF	73487 2 PF	73486 1 PF	77835 173.5
9	73489 8 PF	70624 4 PF	77501 22 PF	73489 8 PF	73487 2 PF	70470 10 PF	78165 30 PF	10K	77365 6 PF	76379 7 PF	73486 1 PF	—	77836 164.5
10	77365 6 PF	70624 4 PF	77501 22 PF	73489 8 PF	73487 2 PF	70470 10 PF	78165 30 PF	76379 7 PF	73490 5 PF	8 PF	73486 1 PF	—	77837 154.5
11	77365 6 PF	73487 2 PF	77501 22 PF	73489 8 PF	73487 2 PF	77365 6 PF	78165 30 PF	76379 7 PF	5 PF	77365 6 PF	73486 1 PF	—	77838 123.5
12	77365 6 PF	73487 2 PF	77501 22 PF	76379 7 PF	73487 2 PF	77365 6 PF	78165 30 PF	76379 7 PF	77995 3 PF	77365 6 PF	—	—	77840 125.5
13	77365 6 PF	73487 2 PF	77501 22 PF	76379 7 PF	73487 2 PF	77365 6 PF	78165 30 PF	76379 7 PF	3 PF	77365 6 PF	—	—	77841 128.5

Figure 8-4. Model 6300 Output Converter, Channels 7 through 13, Schematic Diagram

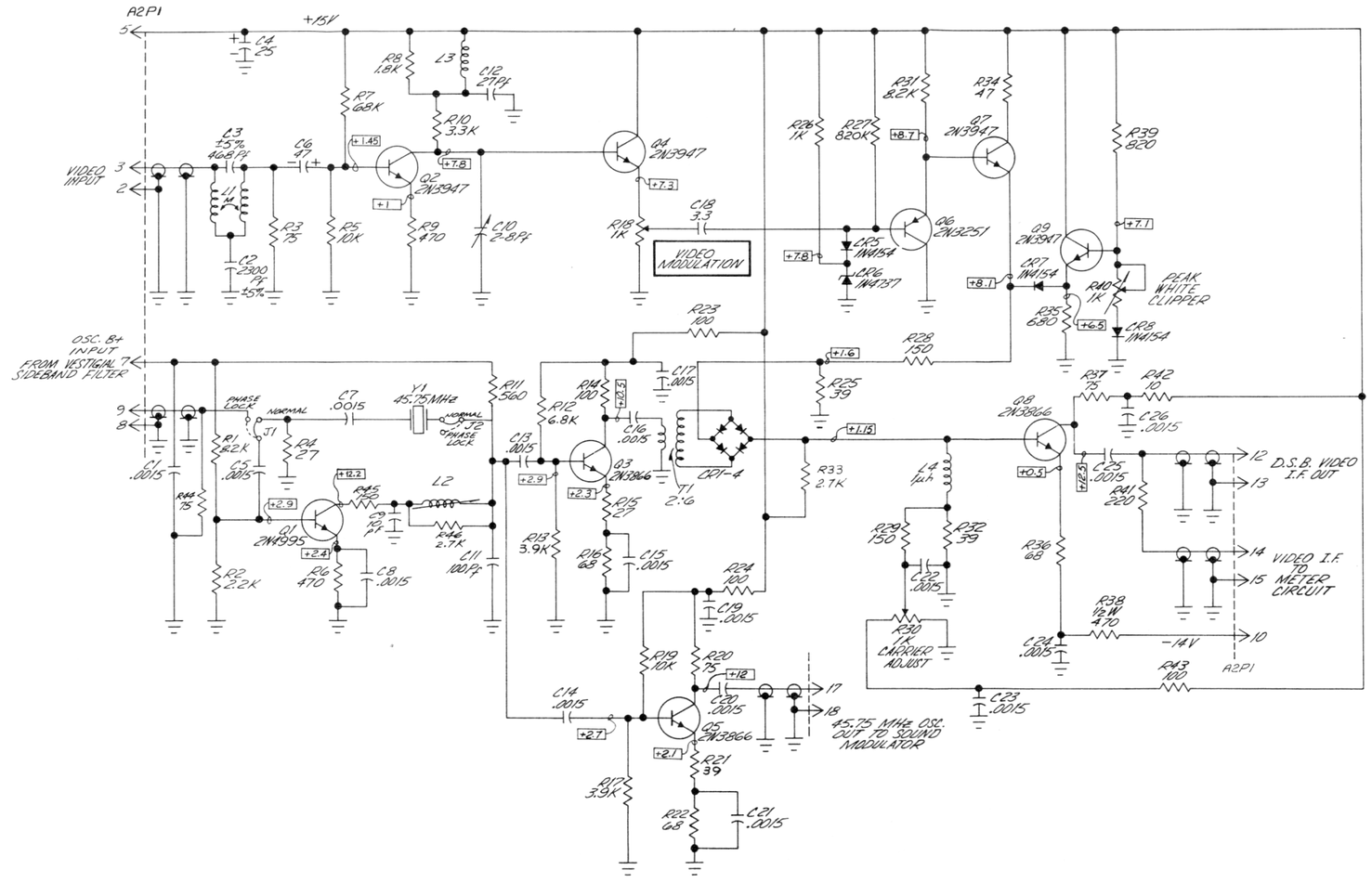


Figure 8-5. Model 6300 Video Modulator, Schematic Diagram

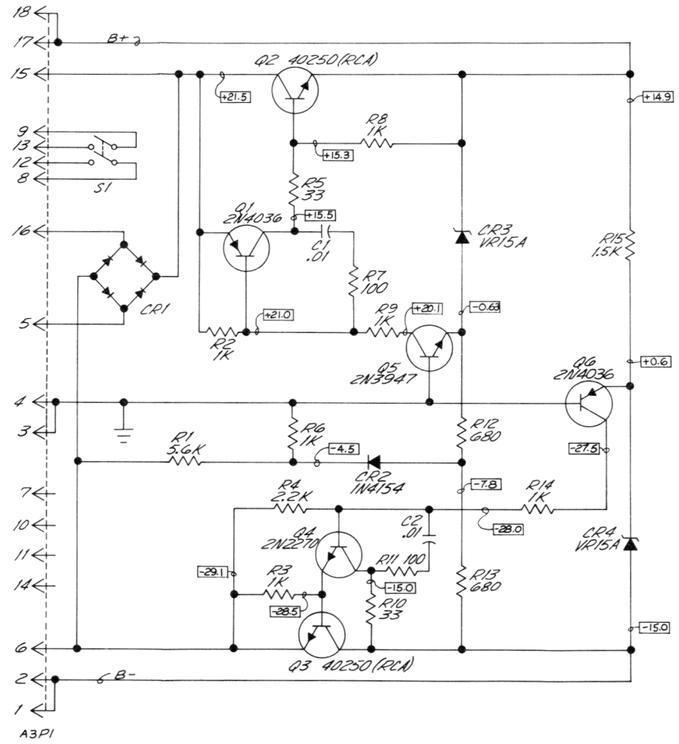


Figure 8-6. Model 6300 Power Supply, Schematic Diagram

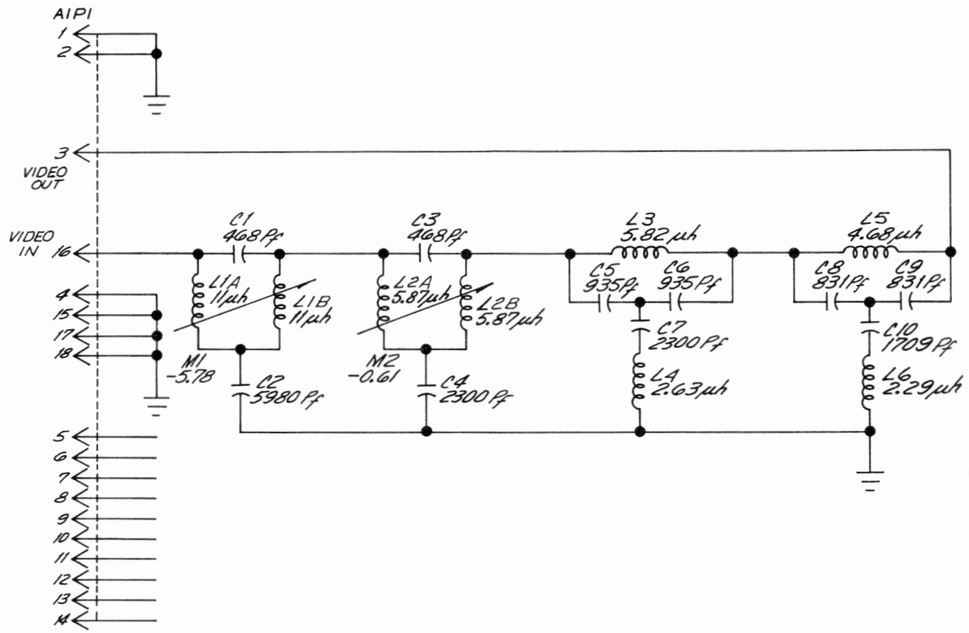


Figure 8-7. Model 6300 Phase Equalizer, Schematic Diagram

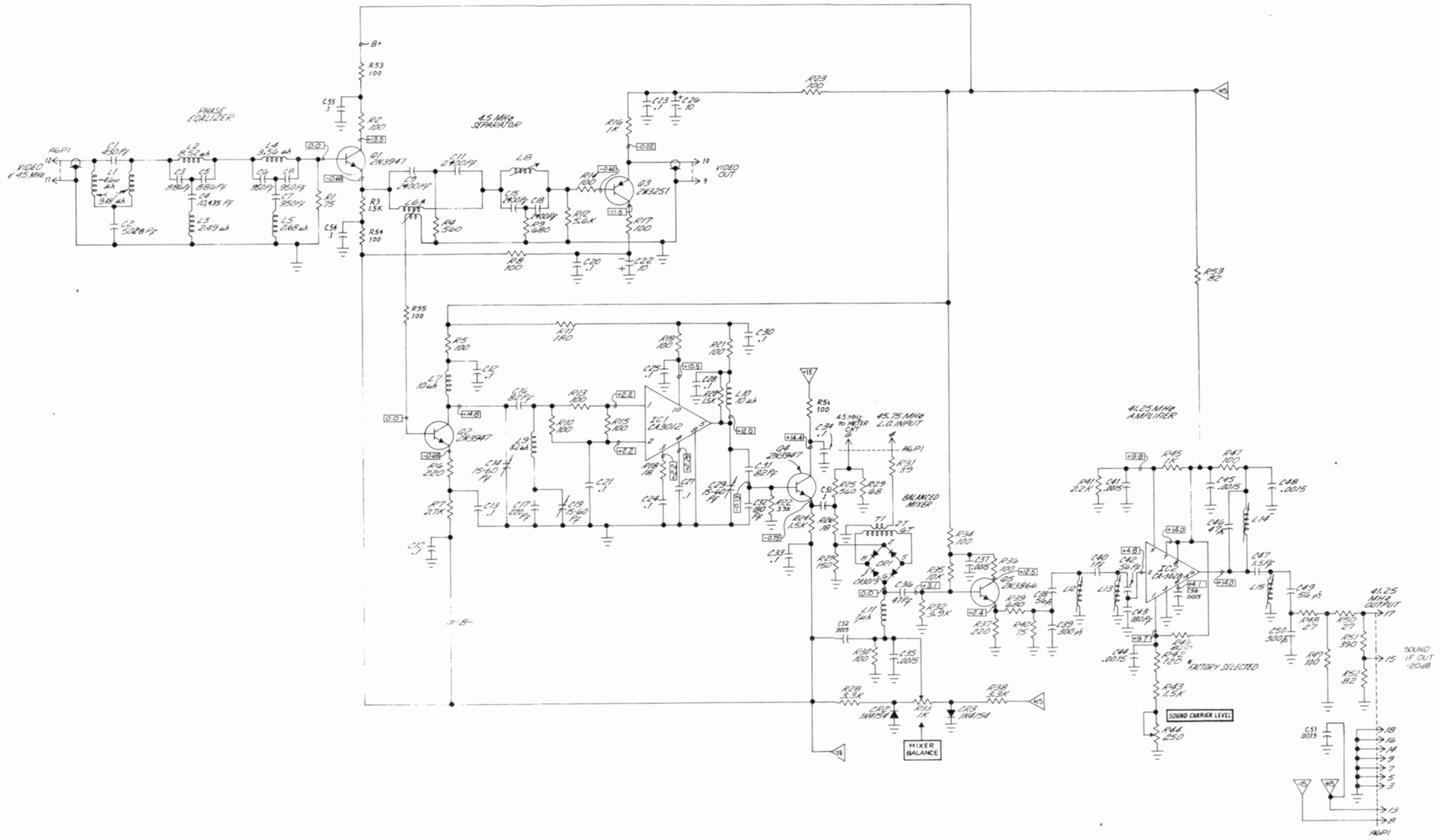
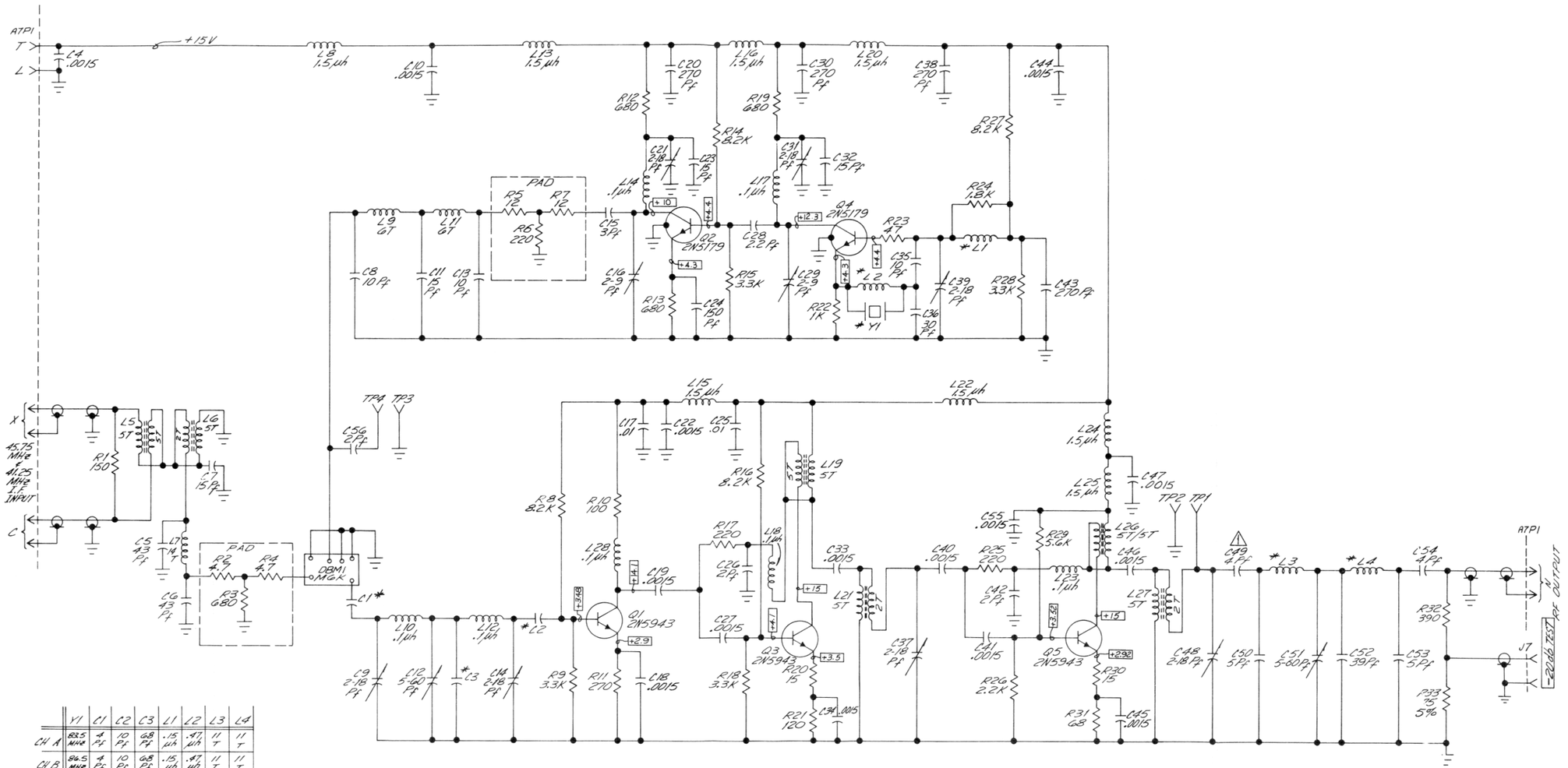


Figure 8-8. Model 6300 4.5 MHz Converter, Schematic Diagram

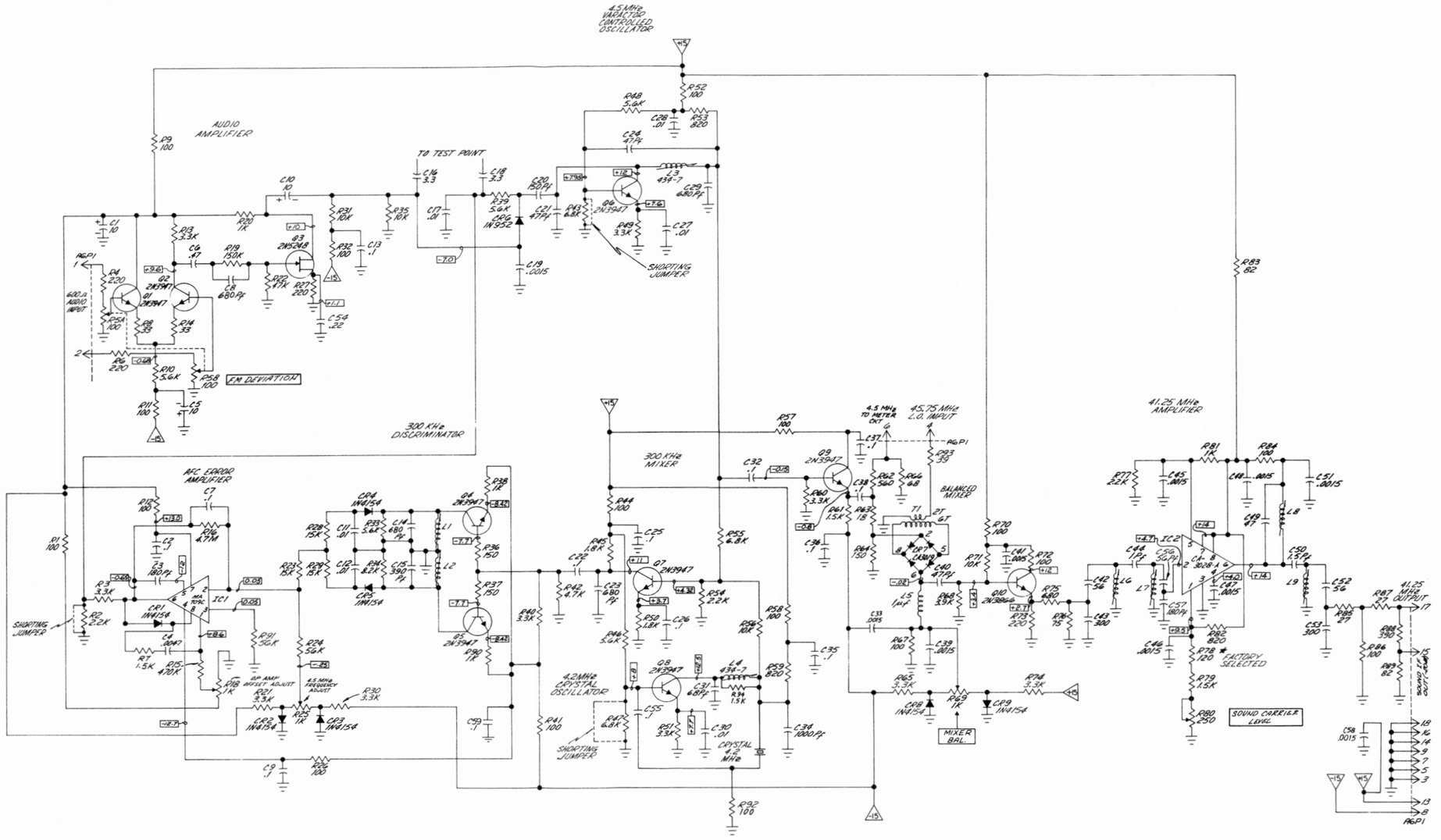


	Y1	C1	C2	C3	L1	L2	L3	L4
CH A	82.5 MHz	4 Pf	10 Pf	68 Pf	.15 µh	.47 µh	11 T	11 T
CH B	86.5 MHz	4 Pf	10 Pf	68 Pf	.15 µh	.47 µh	11 T	11 T
CH C	89.5 MHz	4 Pf	10 Pf	68 Pf	.15 µh	.47 µh	10 T	10 T
CH D	92.5 MHz	2.2 Pf	8 Pf	43 Pf	.15 µh	.33 µh	10 T	10 T
CH E	95.5 MHz	2.2 Pf	8 Pf	43 Pf	.15 µh	.33 µh	9 T	9 T
CH F	98.5 MHz	2.2 Pf	8 Pf	43 Pf	.1 µh	.33 µh	9 T	9 T
CH G	101.5 MHz	2 Pf	7 Pf	24 Pf	.1 µh	.33 µh	8 T	8 T
CH H	104.5 MHz	2 Pf	7 Pf	24 Pf	.1 µh	.33 µh	8 T	8 T
CH I	107.5 MHz	2 Pf	7 Pf	24 Pf	.1 µh	.33 µh	8 T	8 T

*REFERENCE CHART for VALUE

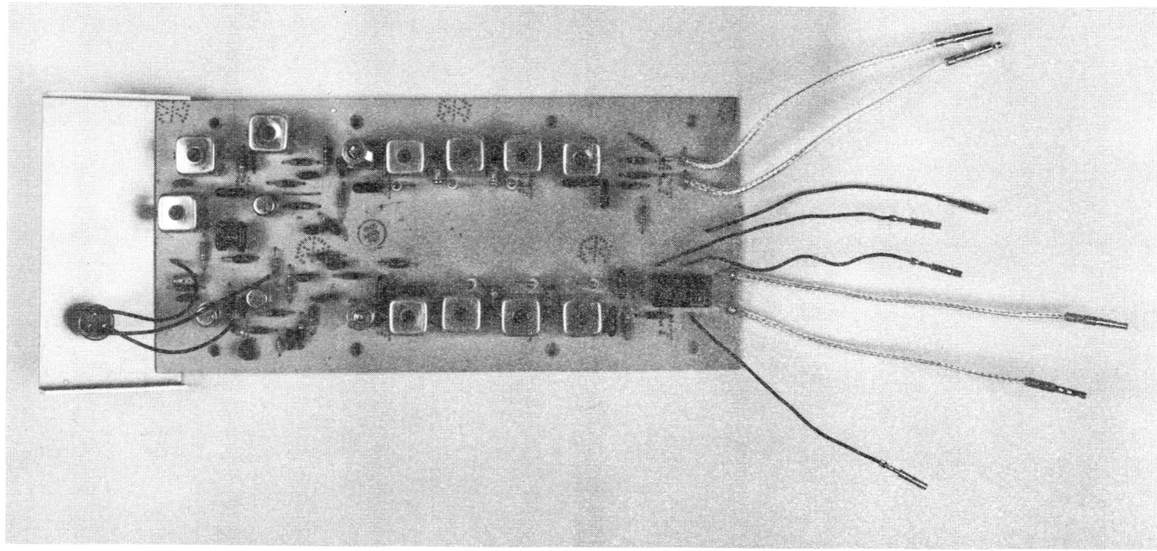
⚠ OMIT C49 DURING CONSTRUCTION OF UNIT

Figure 8-8A. Midband Output Converter Schematic

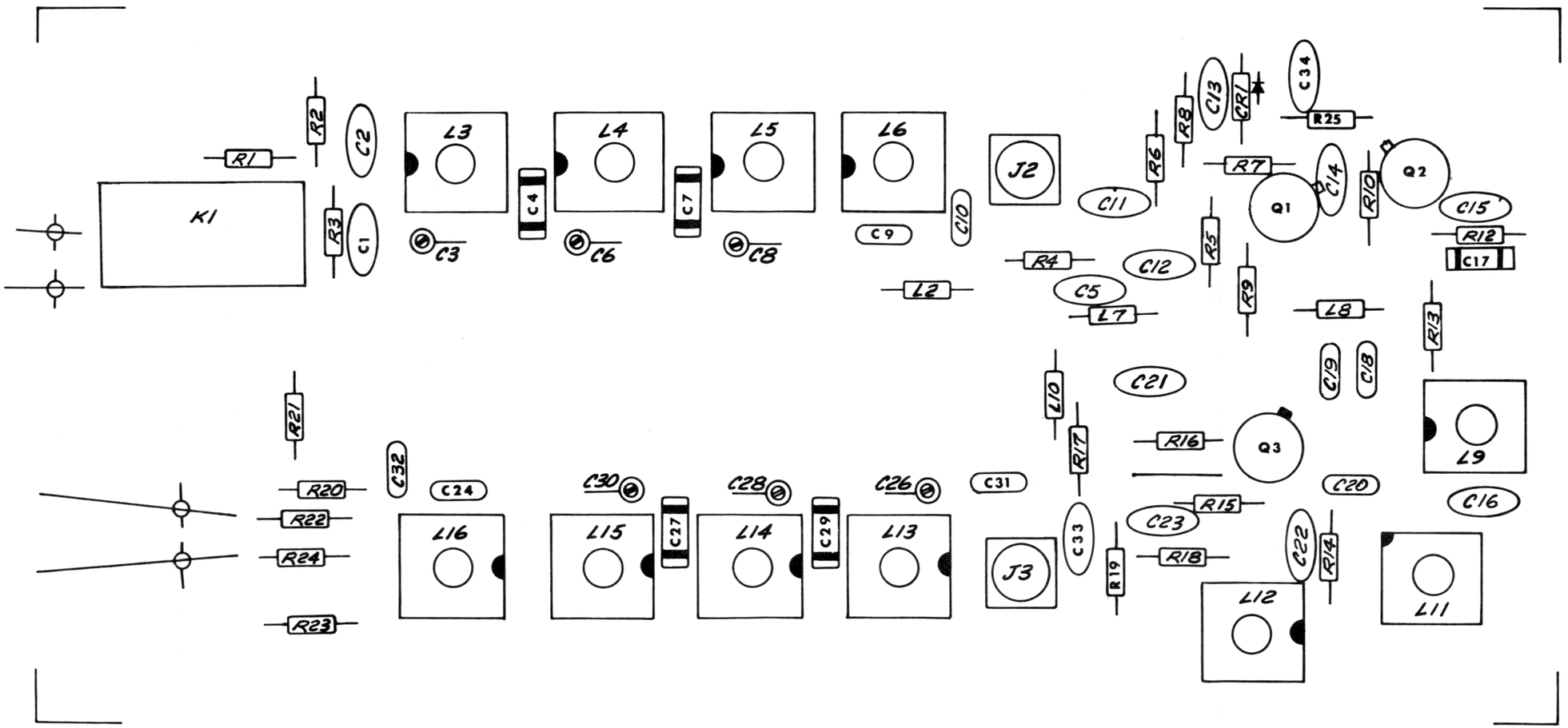


NOTE:
1. DOTTED CONNECTIONS INDICATE SHORTING JUMPERS NECESSARY IN CHECK-OUT OF MODULE BUT WHICH ARE LATER REMOVED.
2. R17-NOT USED.

Figure 8-9. Model 6300 Audio Modulator, Schematic Diagram

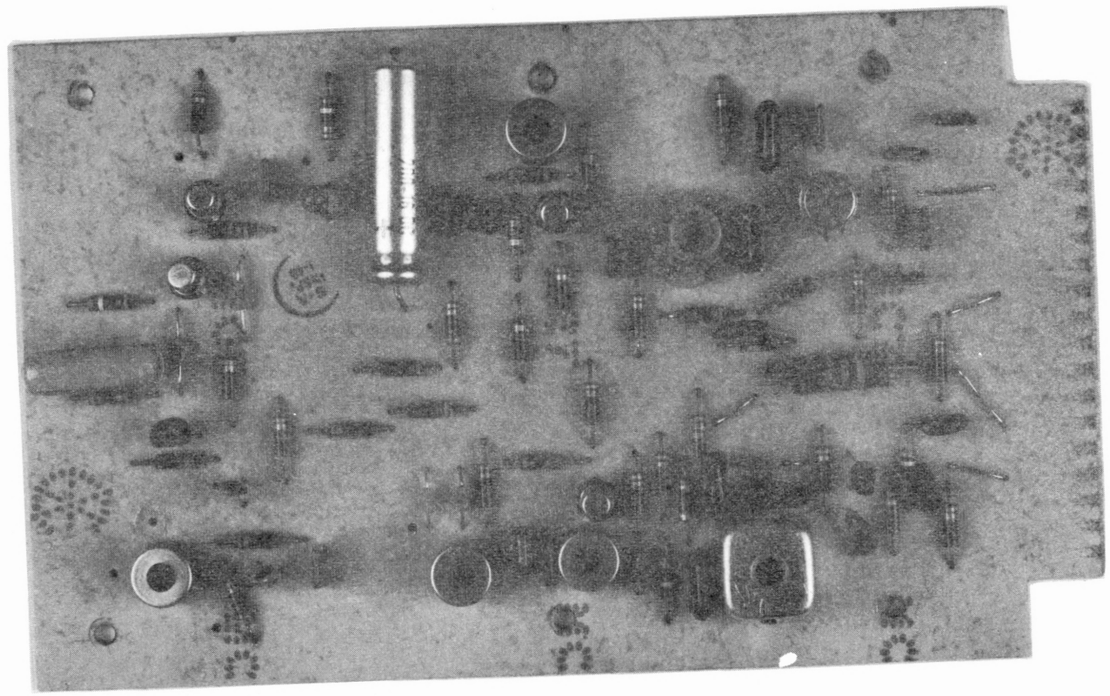


a. Vestigial Sideband Filter Photo



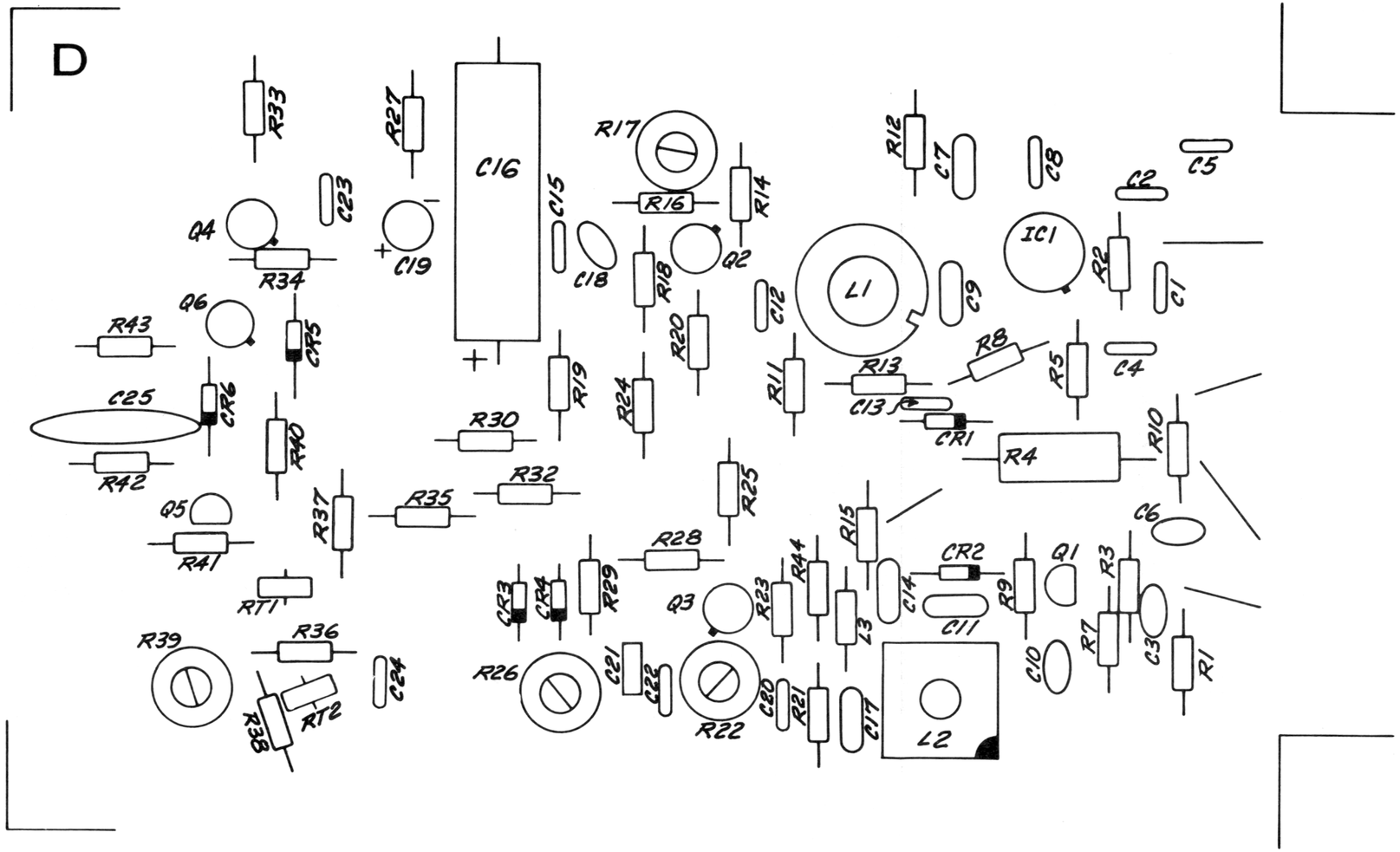
b. Vestigial Sideband Filter Assembly

Figure 8-10. Vestigial Sideband Filter



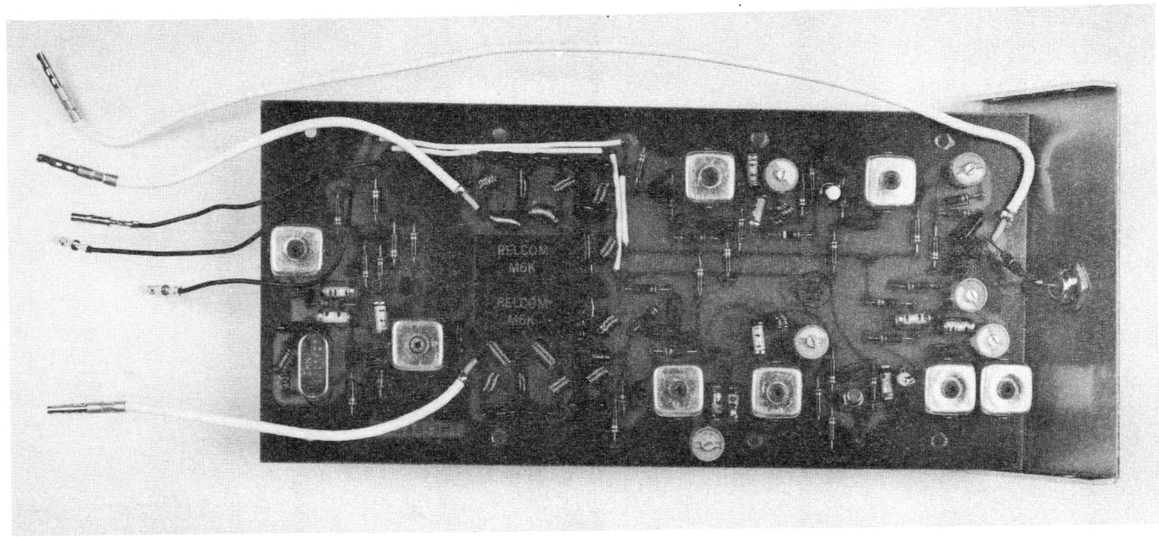
a. Meter Circuit Photo

P05-7

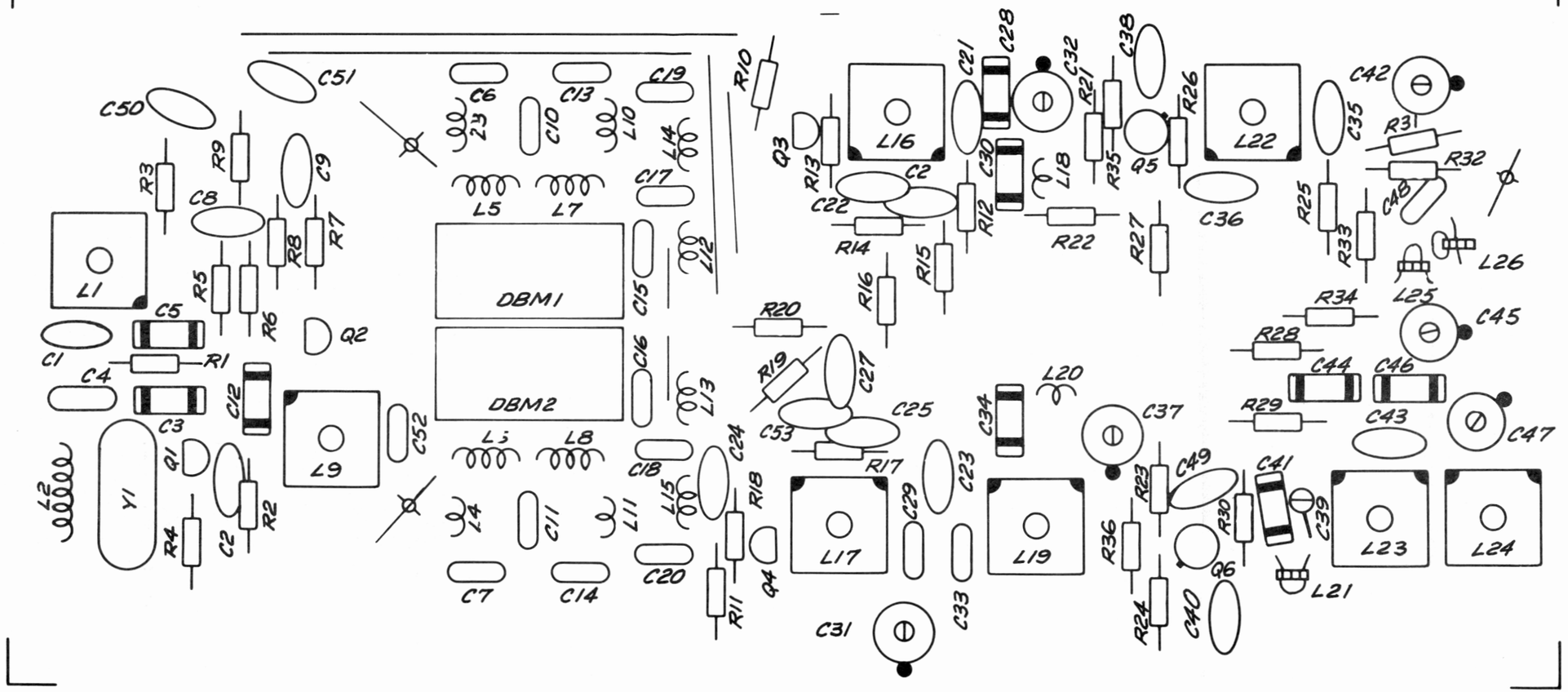


b. Meter Circuit Assembly

Figure 8-11. Meter Circuit

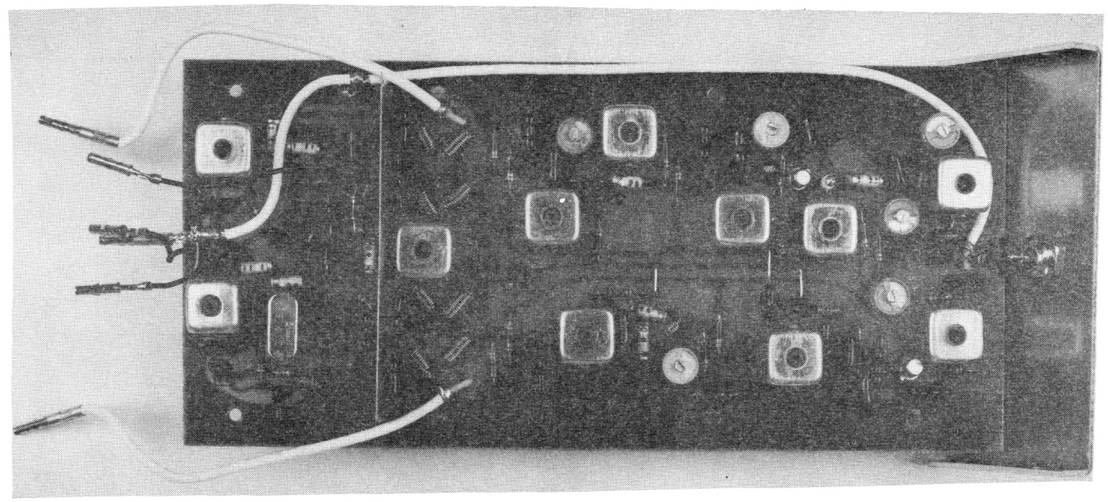


a. Low-Band Output Converter Photo

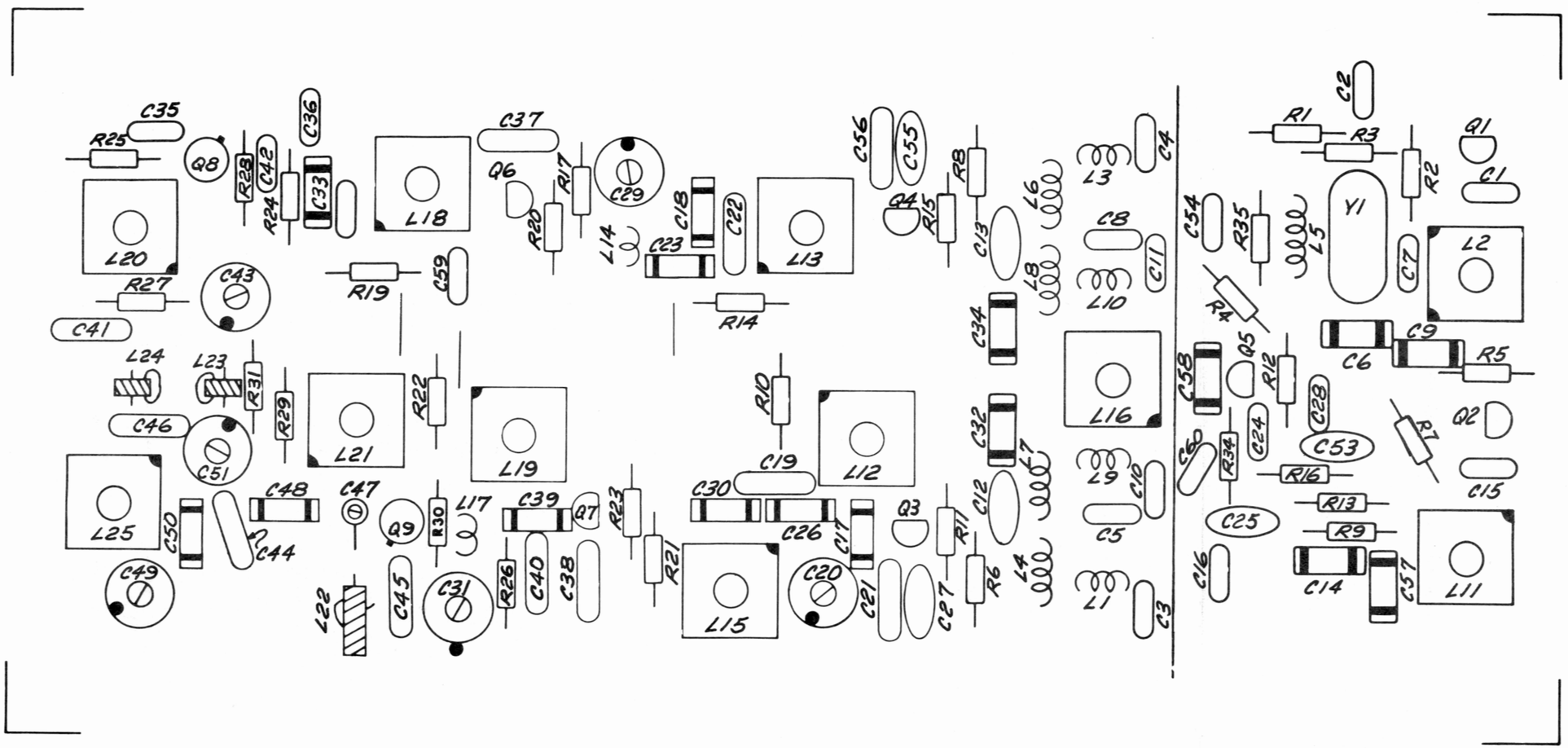


b. Low-Band Output Converter Assembly

Figure 8-12. Low-Band Output Converter

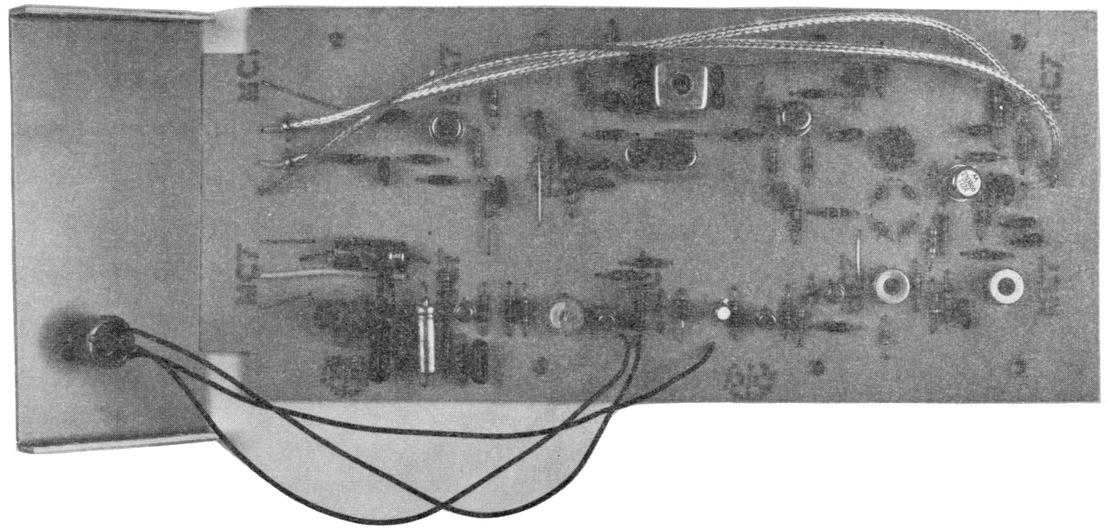


a. High-Band Output Converter Photo

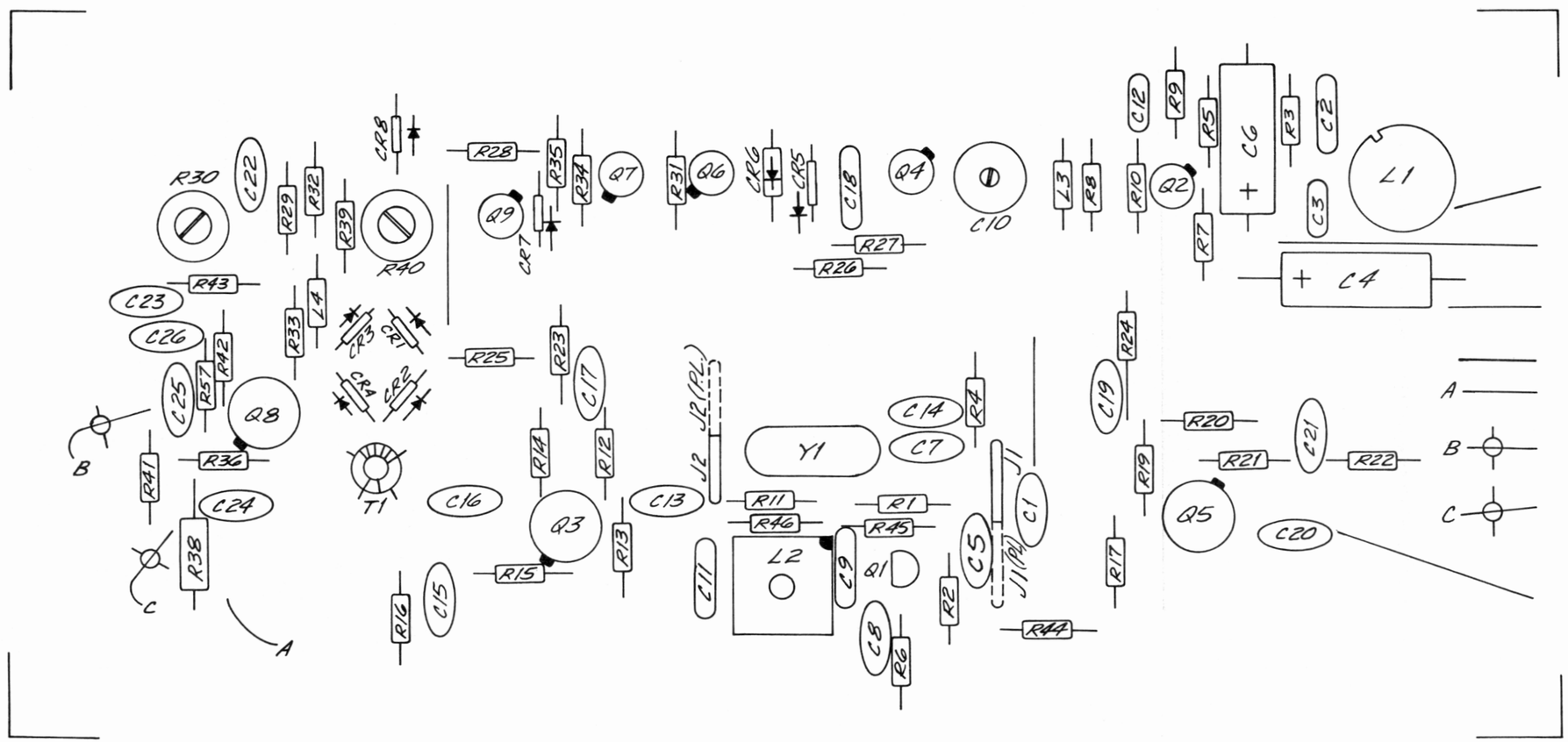


b. High-Band Output Converter Assembly

Figure 8-13. High-Band Output Converter

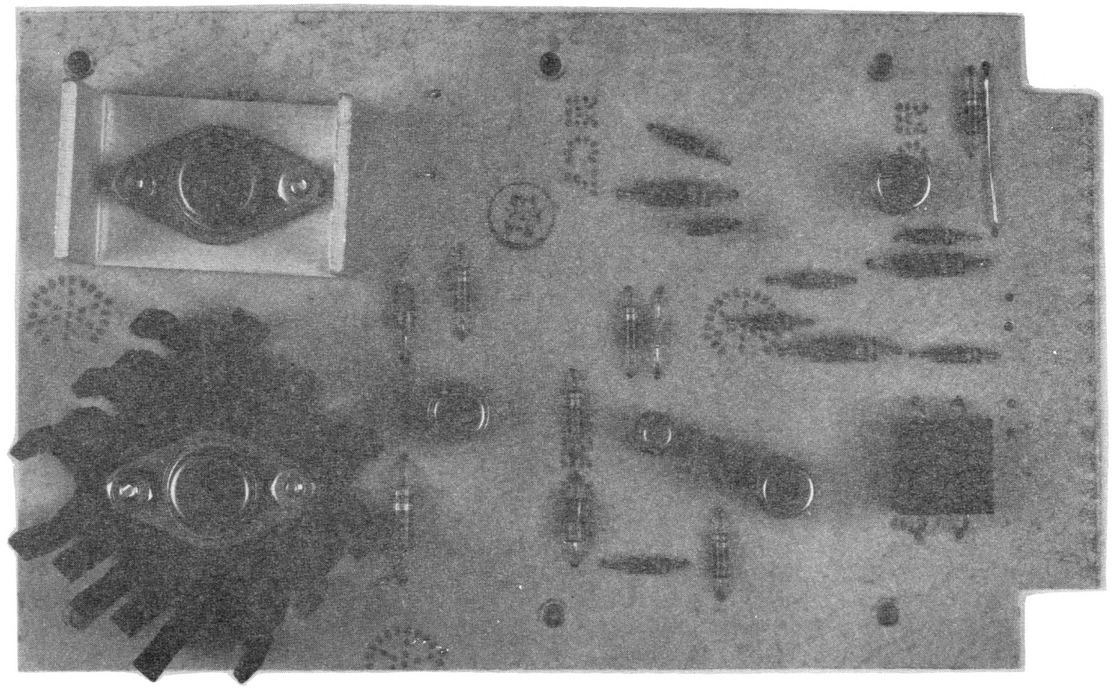


a. Video Modulator Photo

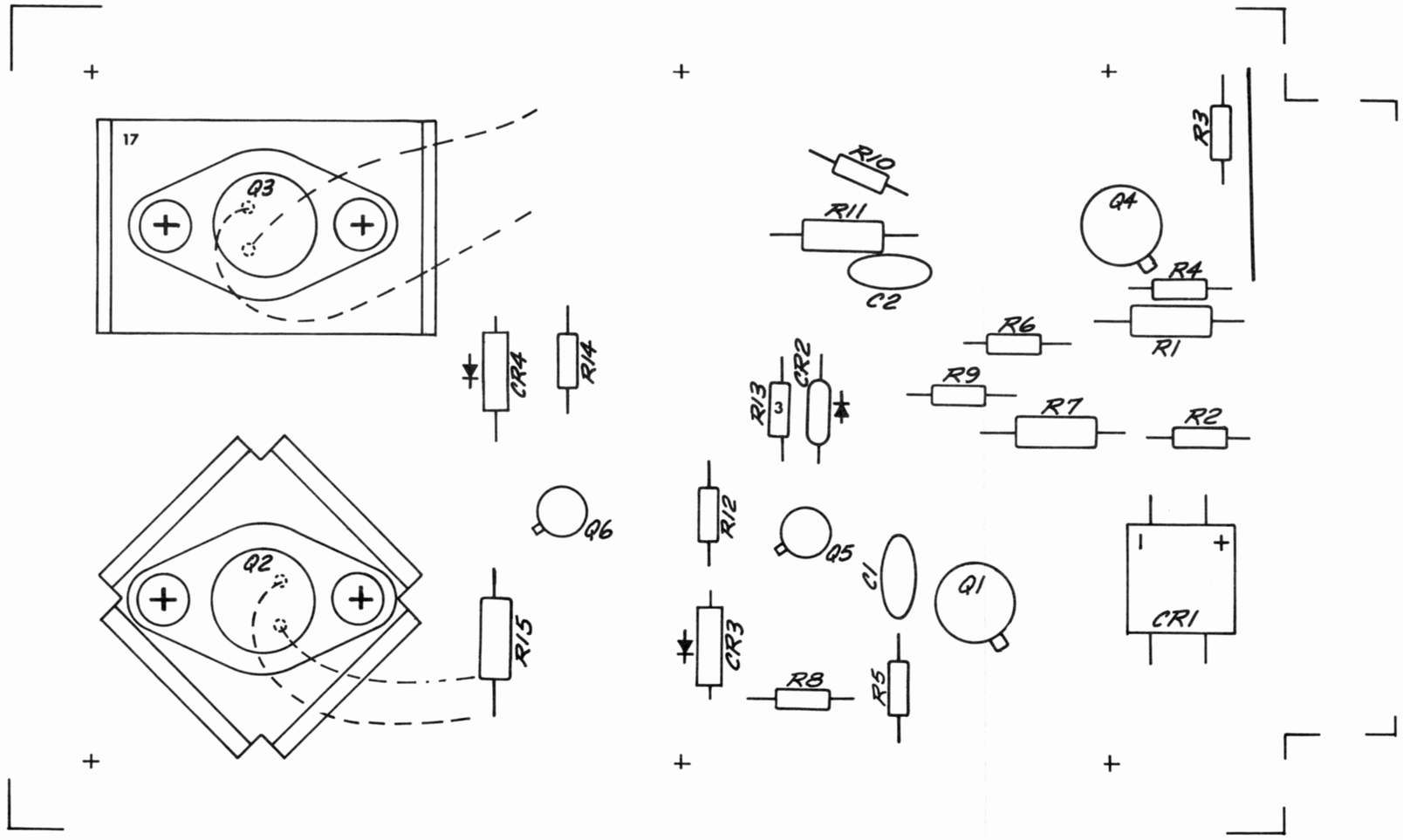


b. Video Modulator Assembly

Figure 8-14. Video Modulator

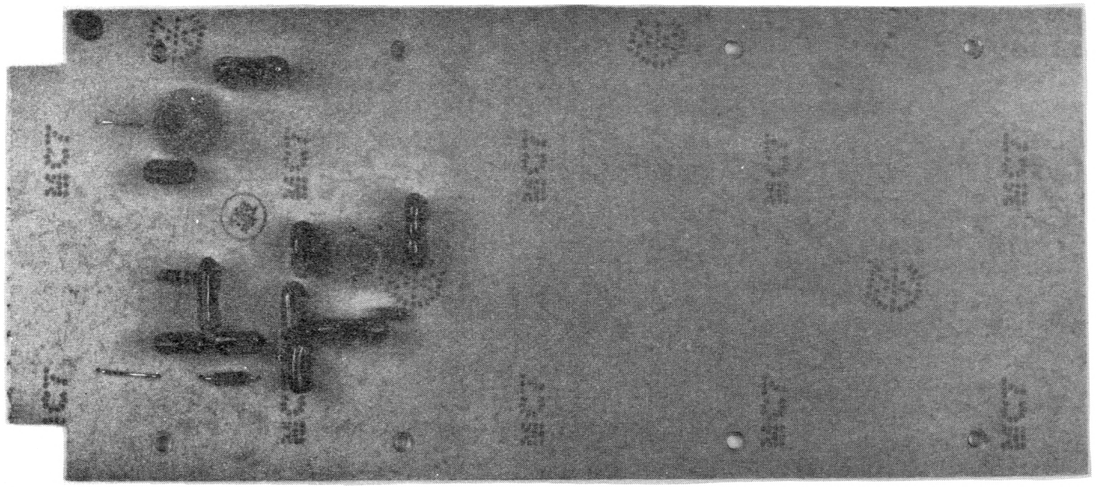


a. Power Supply Photo

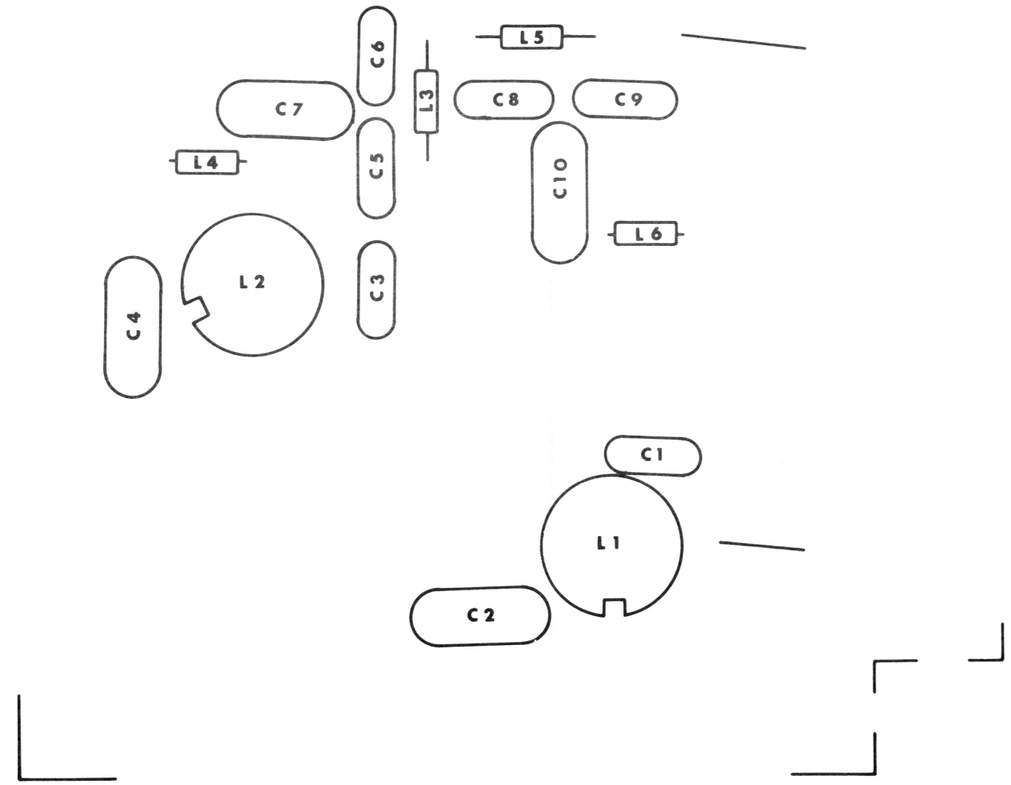


b. Power Supply Assembly

Figure 8-15. Power Supply

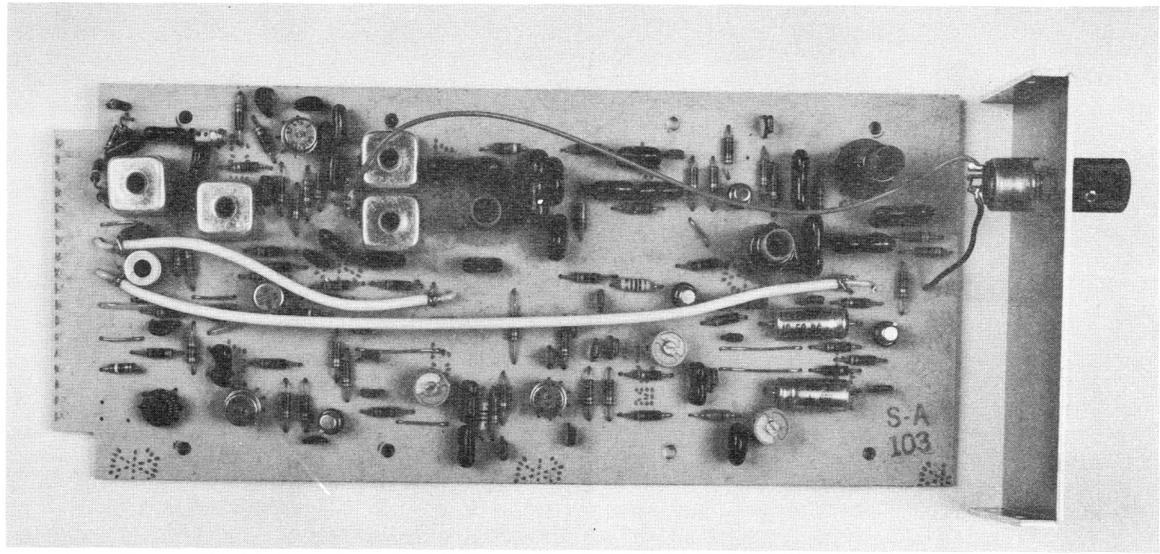


a. Phase Equalizer Photo

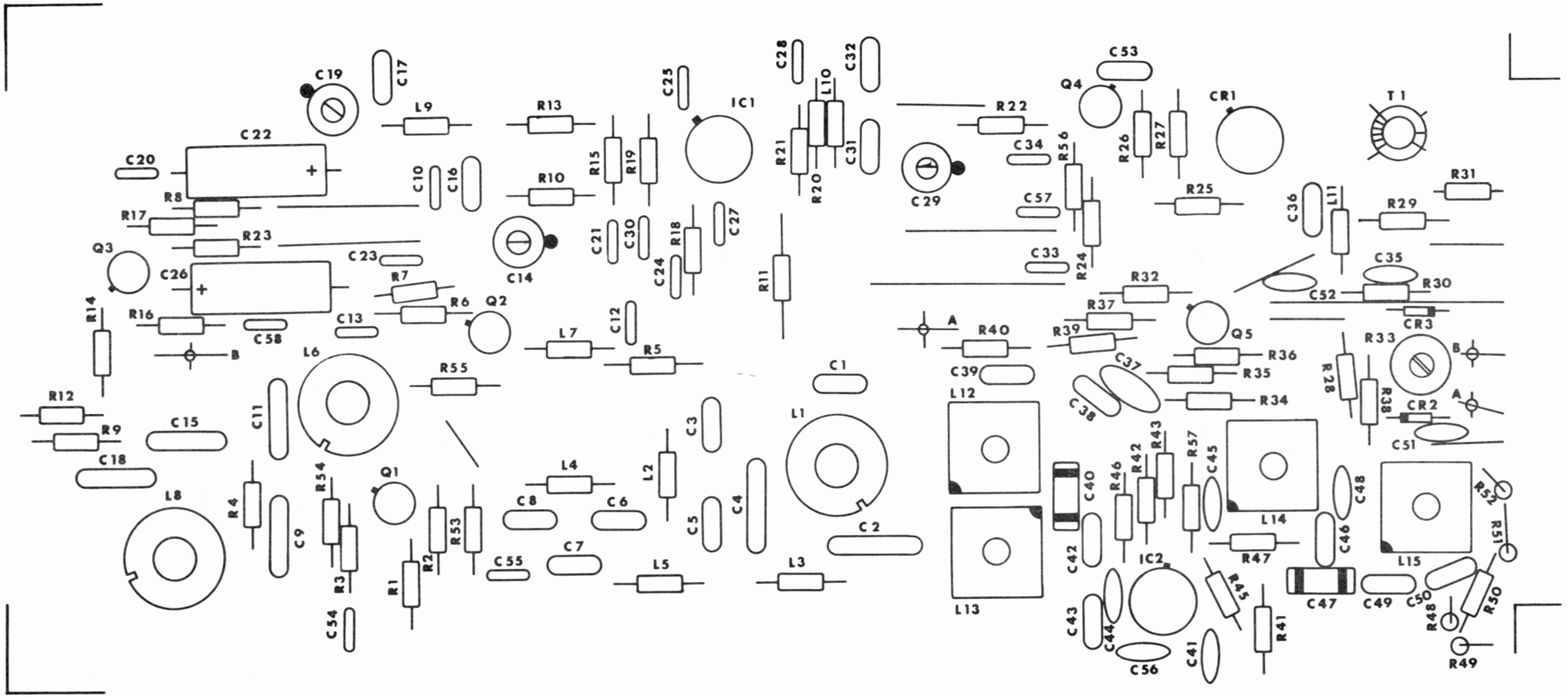


b. Phase Equalizer Assembly

Figure 8-16. Phase Equalizer

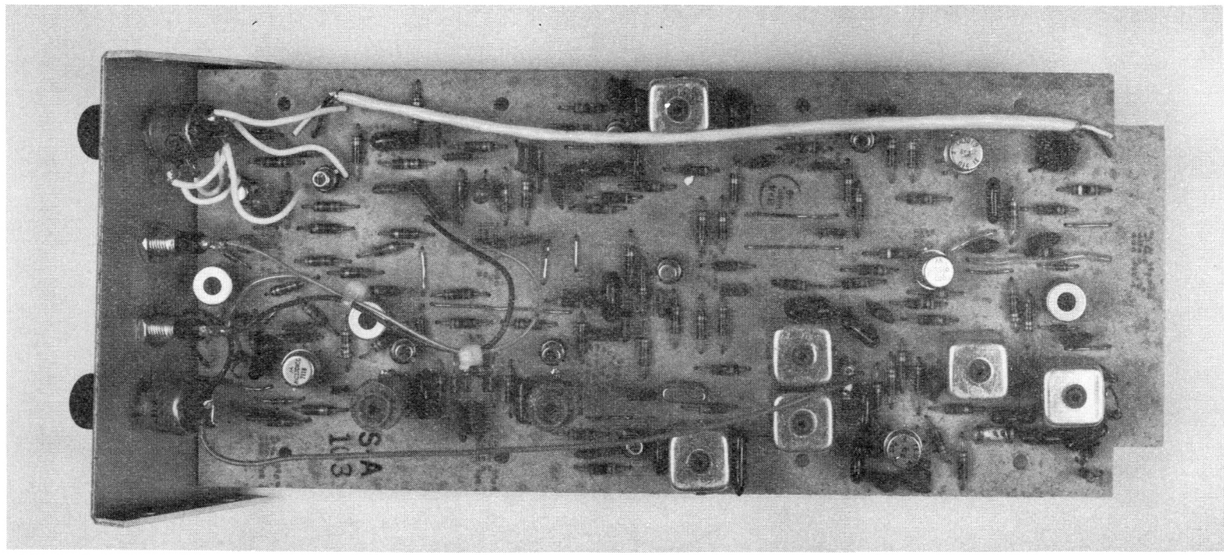


a. 4.5 MHz Converter Photo

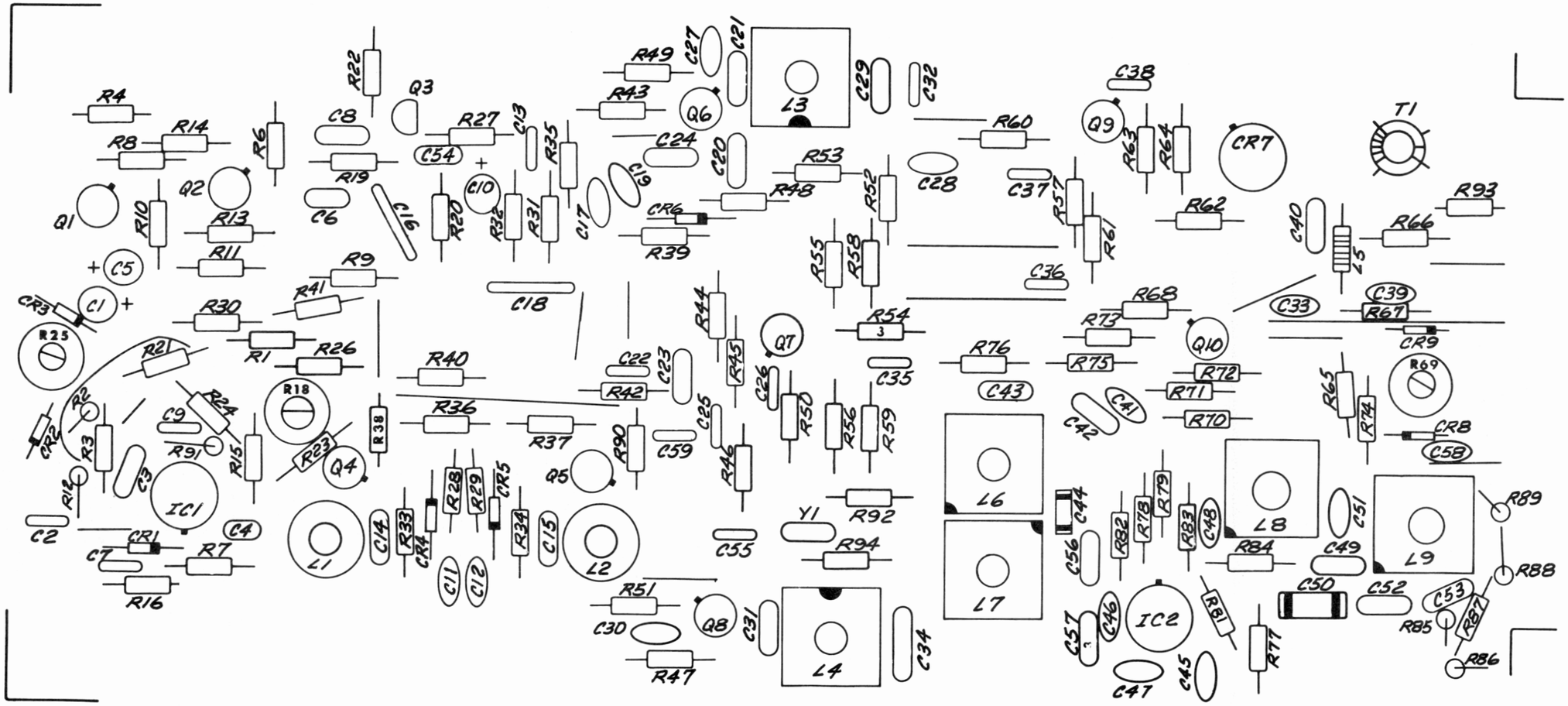


b. 4.5 MHz Converter Assembly

Figure 8-17. 4.5 MHz Converter

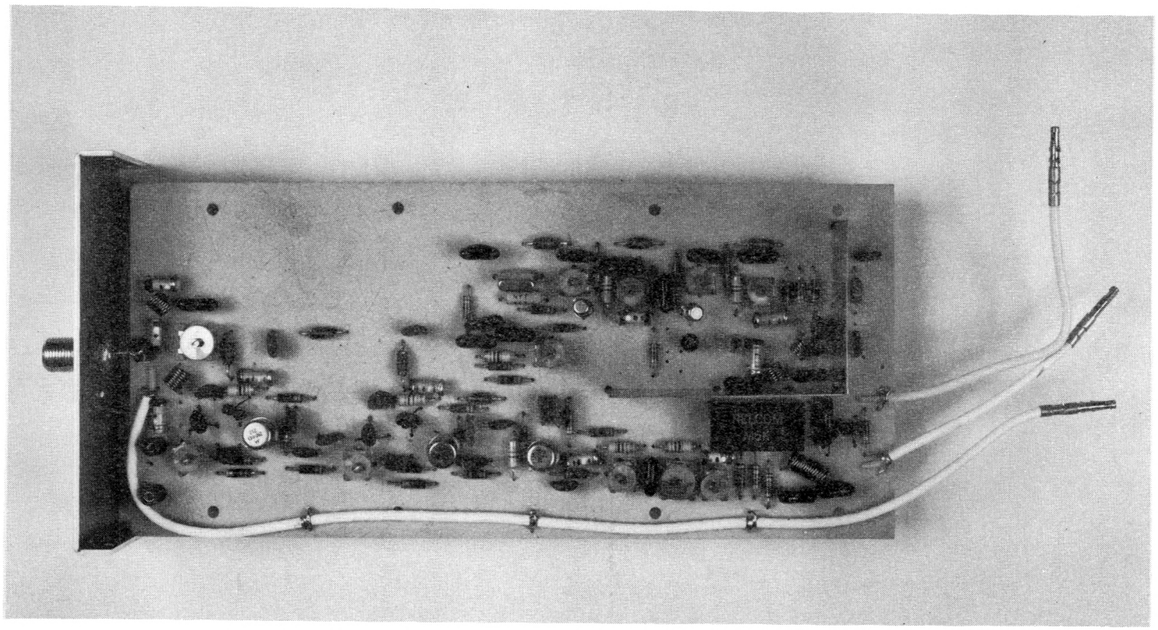


a. Audio Modulator Photo

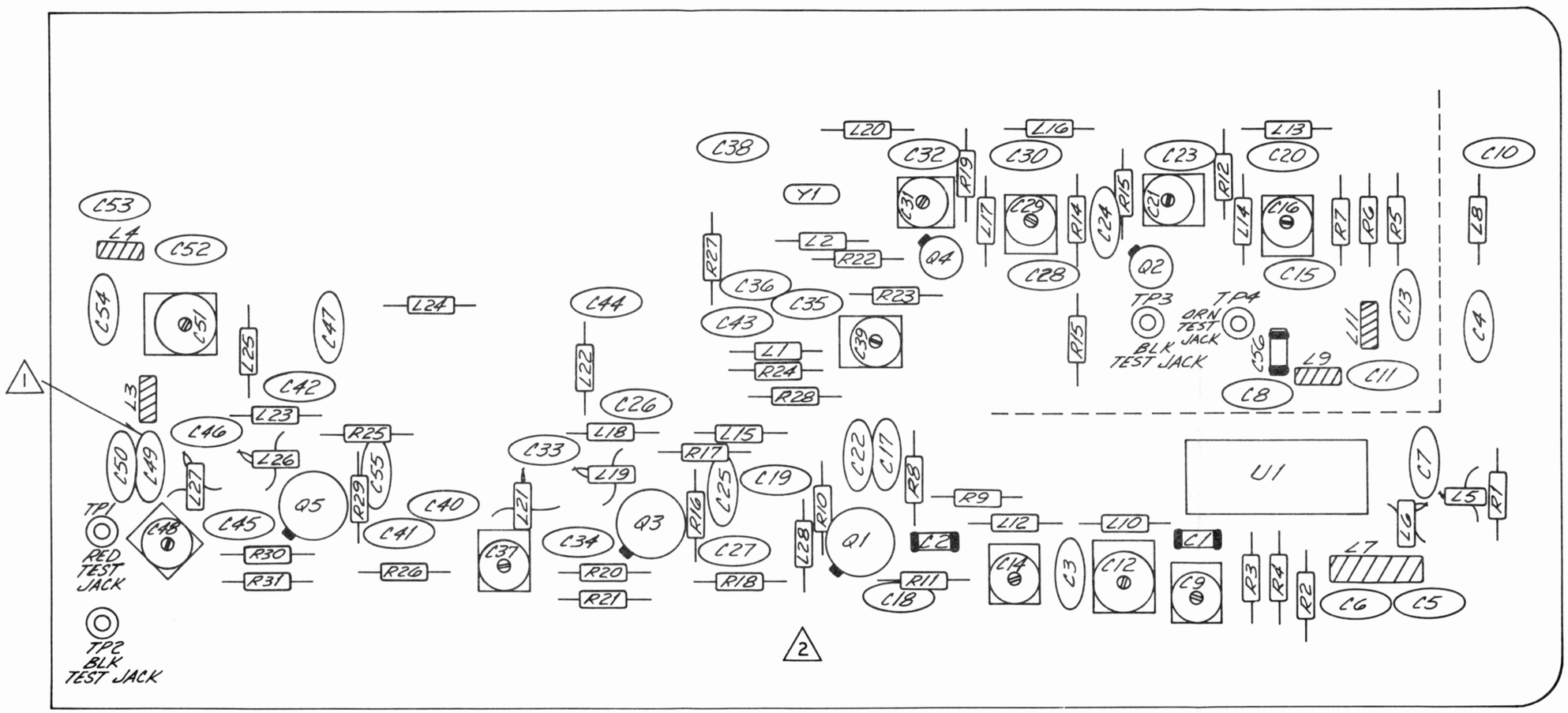


b. Audio Modulator Assembly

Figure 8-18. Audio Modulator



a. Midband Converter Photo



b. Midband Converter Assembly

Figure 8-19. Midband Converter

SECTION 9
SUPPLEMENTAL INFORMATION

9.1 GENERAL

The following changes are made to the basic configuration when the modulator is supplied with the phase lock option (Model 6300PL, figure 9-1).

a. The blank panel on the left side of the modulator is replaced by a phase lock module. This module contains a front panel indicator which is illuminated when the unit is phase locked.

b. The video modulator is modified to accept an external IF signal, supplied from the phase lock module.

c. The output converter is modified to accept an external local oscillator signal, supplied from the phase lock module.

The phase lock option cannot normally be supplied for chassis serial numbers below 467 (Model 6300) or 165 (Model 6301).

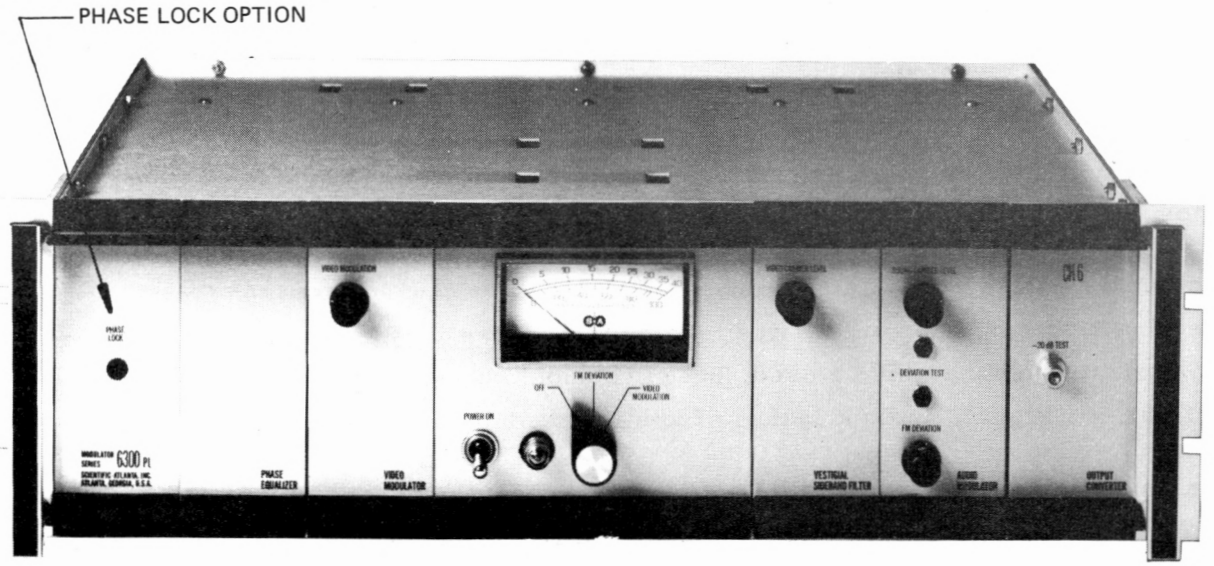


Figure 9-1. Model 6300PL Phase-Locked Modulator

D0773-47

The following specifications apply to the phase lock option for the modulator:

Reference Signal Frequency:	Same as modulator output frequency, channels 2-13 (other frequencies available)
Reference Signal Amplitude:	0 dBmV to +40 dBmV
Output Frequency Accuracy:	
Reference Signal Present:	Locked to reference signal
Reference Signal Absent:	±1 kHz of nominal carrier frequency at 77°F plus ±.002% over operating temperature range.
Phase Lock Acquisition Range:	±25 kHz

Note

The minimum reference signal sensitivity is limited to 0 dBmV to reduce the possibility that the modulator will attempt to lock onto leakage from its own output when the reference signal leaves the air.

9.2 INSTALLATION

The phase-locked modulator is installed as a normal modulator would be, with the addition that an RF input must be supplied to the RF IN connector (J11). Since the reference RF supplied to this connector is at the same frequency as is the RF output, care should be taken to route the input and output cables as far away from each other as possible. This is necessary in order to avoid coupling the modulator output back to the reference input.

Scientific-Atlanta recommends that the reference signal be obtained from a splitter or directional coupler on the line feeding the processor for the reference channel. A separate antenna may be used, but care should be taken that this antenna picks up off-the-air signal, and not leakage from the modulator output cable.

An auxilliary output is available from pin 2 on test connector XA8 (see figure 9-2). This is a baseband video signal demodulated from the reference signal. Luminance and sync information is available. The format is standard negative-going sync, 1V peak-to-peak signal, with a 75 ohm output impedance. This output may be used to genlock a local origination to the reference signal.

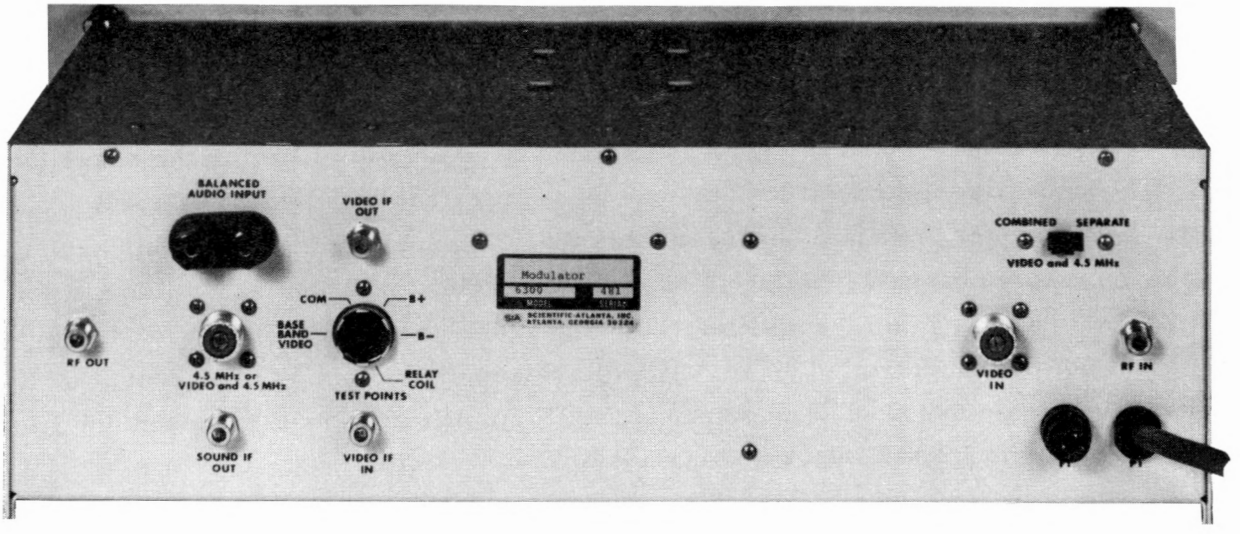


Figure 9-2. Model 6300PL Phase-Locked Modulator Rear Panel Connectors

D0773-48

Sections 1 through 4 are applicable to the Models 6300 and 6301 Modulators installation, and is also applicable to the Model 6300PL Modulator. The interface connections, levels and operating controls described in these sections remain unchanged, however, in addition, the phase-locked modulator requires an RF input and supplies an auxilliary baseband video signal.

9.3 THEORY OF OPERATION

The phase lock module supplies two signals to the remainder of the modulator: a 45.75 MHz intermediate frequency carrier to the video modulator, and a local oscillator signal to the output converter. A voltage-controlled crystal oscillator (VCXO) is used to generate the IF carrier. This oscillator is controlled by a phase-locked loop, in such a manner that the output signal is phase coherent with the reference (off-the-air) signal. A common local oscillator is used to both downconvert the reference signal and to upconvert the reference signal and to upconvert the modulated IF carrier to the output frequency. Because of this, the phase comparison may be performed at the IF frequency, with the assurance that the output signal will be coherent with the reference signal.

The reference signal is processed on an RF circuit board mounted above the main (phase lock) circuit board, in the phase lock module. See figure 9-8 (lowband) or figure 9-9 (highband). This board contains the local oscillator and mixer to downconvert the reference RF signal to a 45.75 MHz IF. An RF amplifier is also included on the highband board. In addition, this circuit board contains the VCXO.

The downconverted reference signal is supplied to a bandpass filter on the phase lock circuit board. See figure 9-10. This bandpass filter has a bandwidth of about 2.5 MHz, and removes unwanted channels, plus the color subcarrier and sound carrier of the reference channel. The remaining video carrier, with luminance information, is applied to a high gain IF amplifier, U1. Integrated circuit U1 includes the capability of being controlled by an AGC voltage supplied to pin 5, and developed by transistors Q4 and Q5. The output of the IF amplifier is taken from pin 8 of U1 and applied to U2, an integrated circuit limiter/detector.

Circuit U2 has two outputs: a demodulated (baseband) video output taken from pin 4, and a limited carrier output, taken from pin 1. The baseband output is supplied to buffer transistor Q3, and then to the DEMODULATED VIDEO output, through an attenuator. Baseband video is also used to develop the AGC voltage. Transistor Q4 is held in saturation at all times except on sync tips (U2 provides an output with negative-going sync). During the sync interval, Q4 tends to turn off, causing its collector voltage to rise. This collector voltage is peak detected by CR1 and C30. The resultant voltage is buffered by Q5, and fed back to U1. Detector U2 exhibits the characteristic that if insufficient carrier amplitude is present, the sync tip will not drop to zero volts, so Q4 will not turn off, and the AGC voltage can drop. This increases the gain of U1.

The limited IF signal output on pin 1 of U2 has had its sideband level reduced by the limiting process. It is further amplified by the cascode pair of Q1 and Q2, and applied to two phase detectors, located in U3. The other input to the phase detectors is from the VCXO. Input to the four diode phase detector is directly from the VCXO via two signal splitters, T3 and T4. This is the main phase detector through which the loop is closed. The two-diode phase detector is supplied an input from the VCXO that is phase shifted by 90° with respect to the main phase detector input. This quadrature phase detector is used to provide a lock indication when in phase lock, and is used in conjunction with the main phase detector output during acquisition.

Operational amplifiers U4A and U4B provide amplification for the two phase detector outputs. The loop path is from the output of U4A through divider R75 and R76, to the parallel combination of R77 and C48. The remaining circuitry in this area of

the schematic (Q7-Q12 and U5) are concerned with acquisition and phase lock indication. When the unit is phase locked the output from U4B is at approximately 14V dc. This saturates Q9, energizing the light emitting diode and turning off the acquisition circuitry.

Operational amplifier U6B is the loop amplifier containing the loop compensation. The loop is designed as a type II servo so that the relative phase of the VCXO and reference is not a function of the frequency difference between them. Amplifier U6A is a linearization network which operates in conjunction with the VCXO in such a manner that the VCXO output frequency is roughly proportional to the output voltage from U6B. This ensures that the loop characteristics remain approximately constant regardless of the difference between the reference frequency and the nominal VCXO frequency. Transistor Q13 is turned off during phase lock operation. When the AGC voltage drops below a preset threshold, Q13 turns on and clamps the output of U6B to zero volts. This causes the modulator to revert back to non-phase lock operation.

The VCXO circuit consists of Q2 (lowband) or Q4 (highband) on the RF board. The two circuits are identical, so only the lowband circuit will be discussed. A conventional Colpitts crystal oscillator circuit is employed, along with additional reactive components required to adjust the frequency of oscillation. A fundamental mode crystal is used, and is operated at one fourth of the 45.75 MHz (nominal) IF. The collector of Q2 is tuned to the fourth harmonic of the crystal frequency. Varactor CR1 provides electrical control of the frequency of oscillation, while C20 provides mechanical tuning.

The acquisition circuitry is used to drive the VCXO oscillation frequency to within acquisition range by the servo loop. This circuit operates on the principle that information as to whether the VCXO frequency is high or low is contained in the relative phase of the two phase detector outputs. Transistors Q7, Q10 and Q11 form a zero crossing detector operating from the main phase detector. This reference is then used to load phase information into U5. Latch U5 serves as a digital phase shifter. Depending upon whether the VCXO frequency is high or low, the output on U5-12 will be either in phase with the output from U4A, or 180° out of phase with it. This output operates synchronous detector Q12. Current output from Q12 to the summing junction of U6B charges C49, causing the output from U6B to slew in such a direction as to reduce the frequency error in the VCXO output. When acquisition has been completed, Q9 is saturated, energizing the light emitting diode and turning Q12 off.

9.4 ADJUSTMENTS

The number of adjustments required in the phase lock module (figures 9-3 and 9-4) have been held to a minimum but the user is cautioned against attempting to tune up the phase lock circuitry unless proper equipment is available.

EQUIPMENT REQUIRED (Equivalent Equipment is Acceptable)

Description	Manufacturer/Model No.
Oscilloscope, high frequency	Tektronix 454
Sweep Generator	Texscan VS-50
Marker Generator	RCA WR-99A
SWR Bridge	Telonic TRB-50
Volt Ohmmeter	Triplett 630
High Impedance Detector	(See text)
Frequency Counter	Hewlett-Packard 5245L (with 3253B Converter)
75 ohm Termination	
Phase Lock Module Extender	

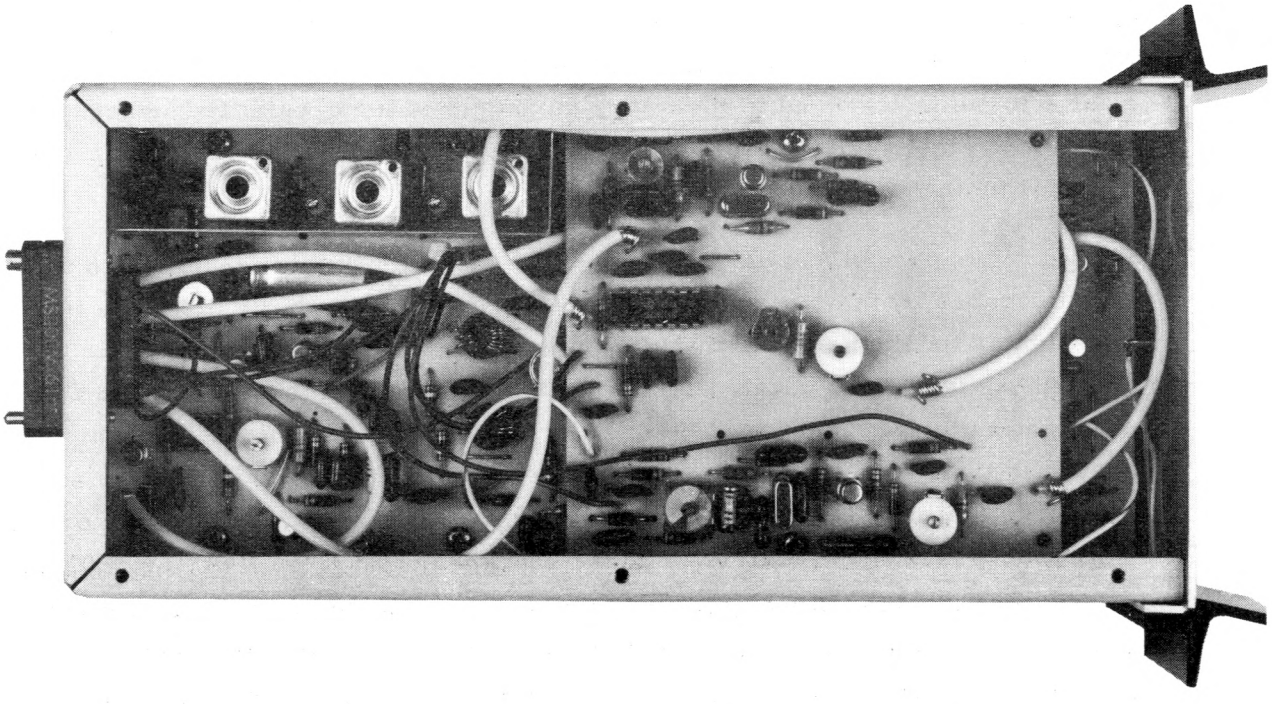


Figure 9-3. Module Top Board, Low-Band Converter

D0773-49

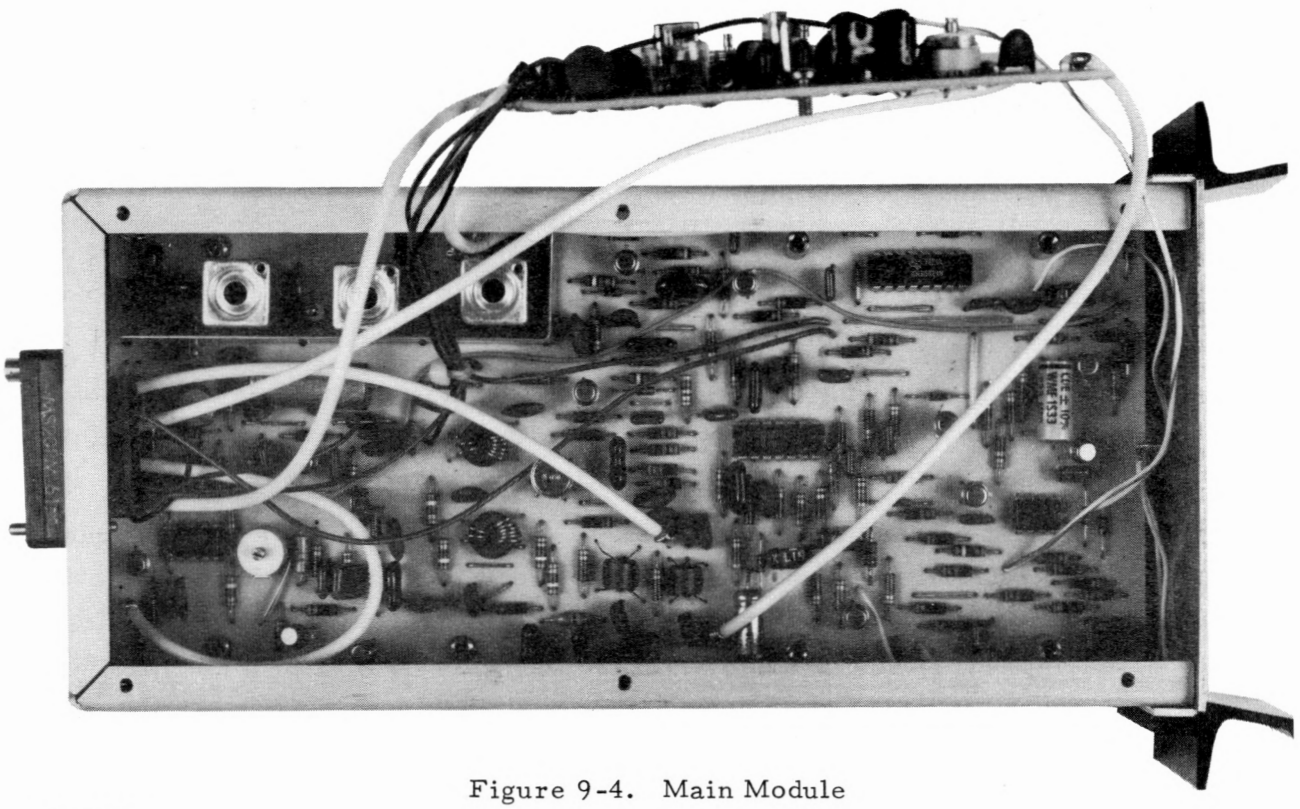


Figure 9-4. Main Module

D0773-50

The high impedance detector may be constructed as shown in figure 9-5. Refer to figure 5-16a for enclosure and mechanical assembly.

In order to check out the phase lock unit, it should be inserted in a modulator on an extender. Be sure that all other modules are in place and are operational.

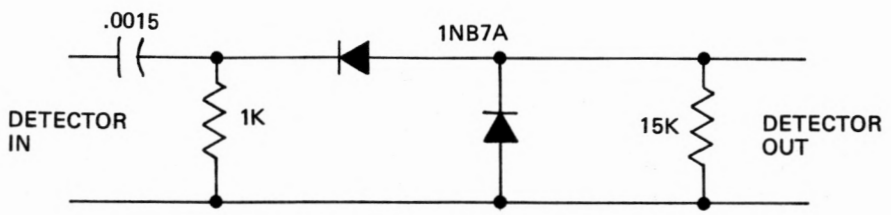


Figure 9-5. High Impedance Detector Schematic

9.4.1 Tune-Up Procedure

a. Set the VCXO tuning capacitor (C20 lowband, C30 highband) on the RF board to minimum capacitance. On the phase lock board, set capacitors C11 and C16 to minimum capacitance.

b. Adjust the input VSWR to less than 1.5:1 across the channel, using a standard swept frequency set-up. The VSWR adjustments are C15 and C16 (lowband) and C20 and C22 (highband) on the RF board.

c. Monitor the emitter of local oscillator transistor Q1, on the RF board, with a high frequency oscilloscope. Adjust C10 (lowband) or C11 (highband) to the center of the range in which the oscillator oscillates.

d. Prepare to align the bandpass filter using swept frequency techniques, by capacitively coupling a high impedance detector to the point marked 1 on the phase lock board. Supply the swept frequency to the RF input at the channel frequency. Supply adequate input to obtain a response. If a highband unit is being tuned, adjust C23 on the RF board for a peak response. Tune the bandpass filter. While tuning, be certain that the AGC circuit is disabled. This may be done by adjusting R33 until it has control of the response pattern. Start with R33 counterclockwise, and advance it as required. Maintain the output from the swept frequency generator at a low level, consistent with getting a usable response. The bandpass filter is tuned with C3, C5, L1, L2, and L3 on the phase lock board. Tune for a 3 dB bandwidth of 2-2.5 MHz, with the picture carrier located near the edge of the flat response region, as in figure 9-6.

Remove the detector when this adjustment has been completed.

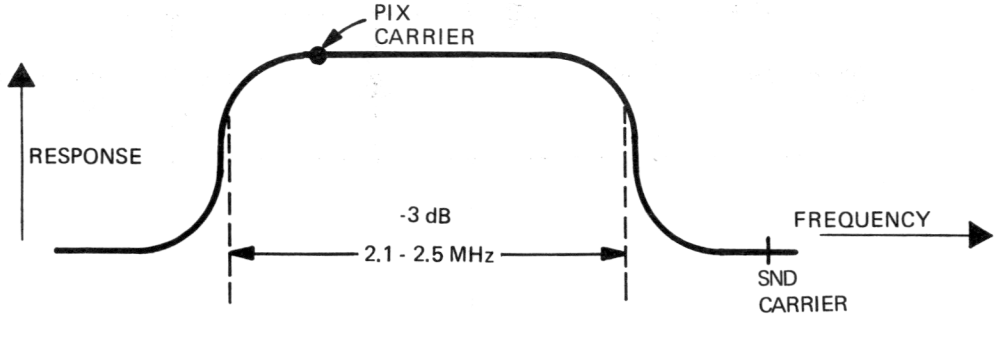


Figure 9-6. Phase Lock Module Sweep Response

e. Return R33 to the extreme CCW position, and apply a television carrier to the RF input. Monitor the DEMODULATED VIDEO OUT with an oscilloscope terminated in 75 ohms. Monitor point 5 on the phase lock board with a meter set to read 0 to +10V dc. Adjust C11 and C16 on the phase lock board for maximum AGC voltage (about 8 volts, depending upon signal strength).

Note

The correct setting of C16 is about 40% meshed. Another peak may be observed near minimum capacitance, but should be avoided.

No AGC voltage will be observed until a certain minimum signal level is reached. Until AGC is obtained, tune by monitoring the video output. Tune for minimum dc voltage. As soon as the video sync tips reach 0 volts AGC will be detected at point 5. If a lowband unit is being tuned, adjust C10 on the RF board to the center of the range of maximum AGC. On a highband unit, adjust C23, C11, C14, and C18 for maximum AGC. Verify the existance of a standard 1V peak-to-peak video signal at the DEMODULATED VIDEO OUT. Temporarily short pins 1 and 2 of U6 (test point 4) as indicated on the board.

f. Adjust the VCXO tuning capacitor (C20 lowband; C30 highband), on the RF board, to its 1/3 meshed position. Monitor point 2 on the phase lock board with a dc oscilloscope. The waveform displayed should be sinusoidal with a frequency under 100 kHz. Adjust R38 on the phase lock board for no dc offset. Adjust the VCXO tank capacitor (C20 lowband; C35 highband) for maximum peak-to-peak amplitude. Recheck the setting of R38.

g. Similarly, monitor point 3 with the oscilloscope and adjust R35 for no offset.

h. Remove the short on U6. Remove the television carrier from the RF input, and remove any video modulation. If an audio modulator is installed, remove it. Monitor the RF output from the modulator with a frequency counter. Adjust the VCXO tuning capacitor (C20 lowband, C30 highband) to the nominal video carrier frequency of the channel being tuned. Do not allow for a possible ±10 kHz offset of the particular station that will be locked to.

i. Supply a television carrier at a 0 dBmV level to the RF input and verify that the PHASE LOCK LAMP on the front panel illuminates. Measure the voltage at test point 3; it should be above +3 volts dc, with some video seen superimposed. Carefully adjust C16 for minimum video content.

j. Verify that the lamp extinguishes when the carrier is removed, and that the voltage at test point 3 drops to no more than 0V dc.

k. Verify overall operation of the modulator.

Maintenance and troubleshooting of the 6300 PL Modulator involves essentially the same techniques and procedures outlined in sections 5 and 6 for the Model 6300 and 6301 Modulators. The only exceptions involve the output converter local oscillator, the 45.75 MHz oscillator and the phase-locked module itself. Alterations in oscillator signal paths are readily identified by comparison of block diagrams (figure 6-1, 6-2, and 9-7). Also, with respect to changes in sections 5 and 6 it should be noted that the 45.75 MHz oscillator B+ disable relay extends to pin W of the phase-locked module connector XA9. Complete modulator chassis wiring, including options, is shown on the chassis schematic diagram 8.

9.5 TROUBLESHOOTING

9.5.1 MODULE ISOLATION

Defective module isolation is more difficult in the 6300 PL Modulator in that a defective phase locked module can cause symptoms characteristic to other module malfunctions. These erroneous symptoms occur due to the fact that in a 6300PL Modulator, both the output converter local oscillator and the 45.75 MHz oscillator are located within the phase locked module itself. Because of this verification of proper oscillator operation should be effected before concluding that another module is defective.

Indication of proper operation of the phase-locked module can be obtained through the "phase lock" indicator lamp. Proper operation of the lamp occurs only when all circuits within the phase-locked modulator are operating. With phase-locked module operation verified further module isolation can be achieved through the use of the "module isolation guide" in section 6.

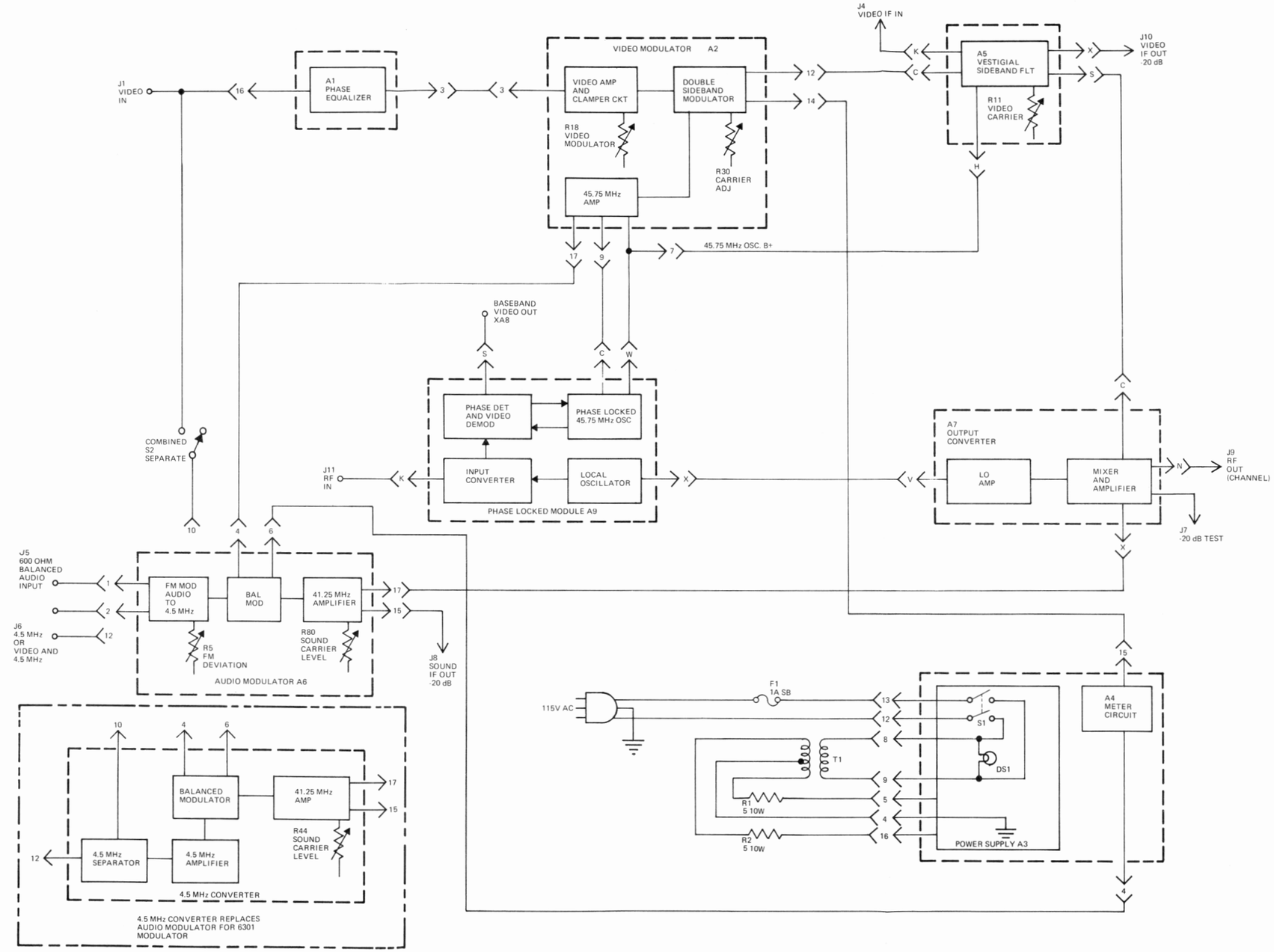
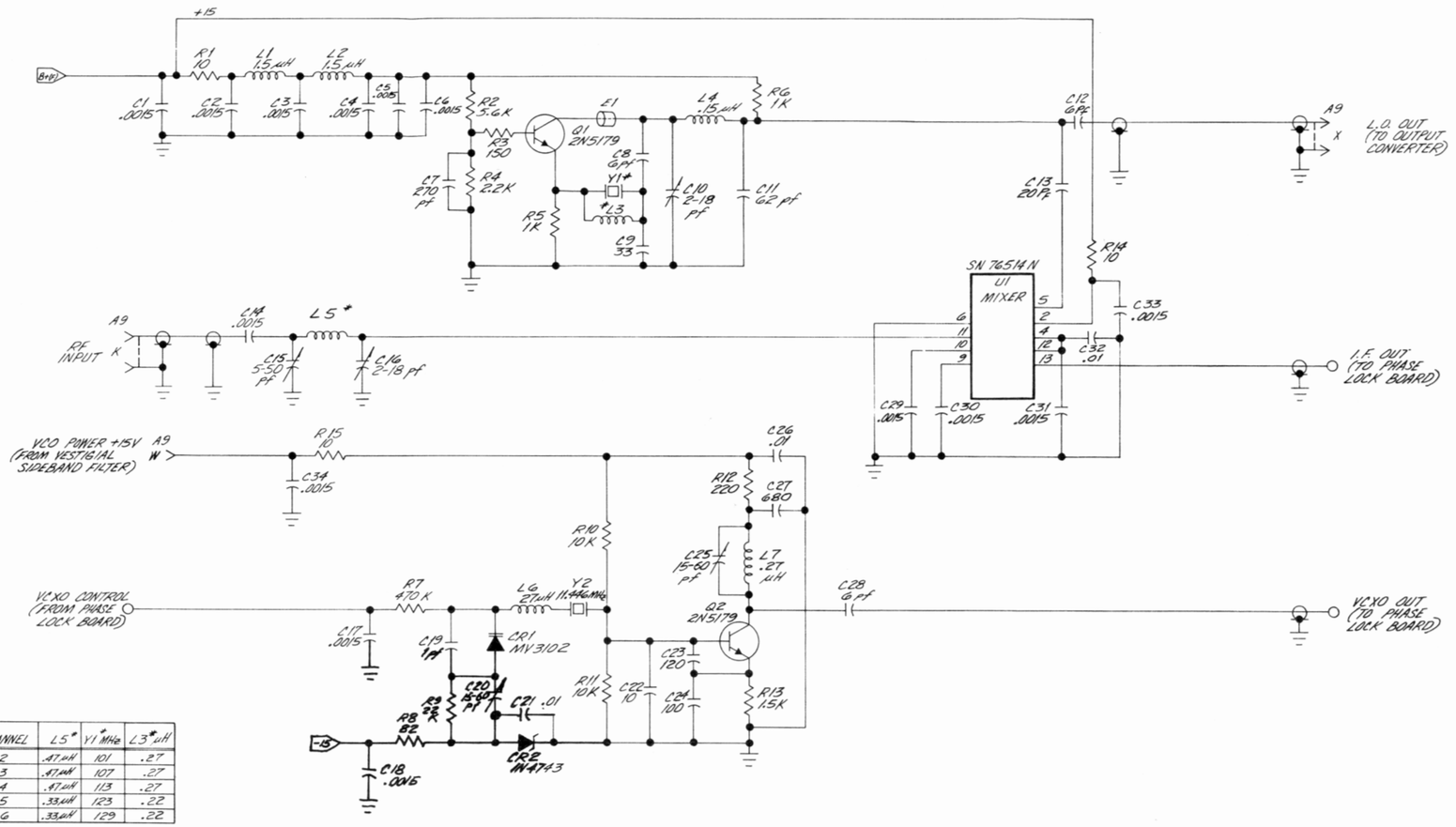


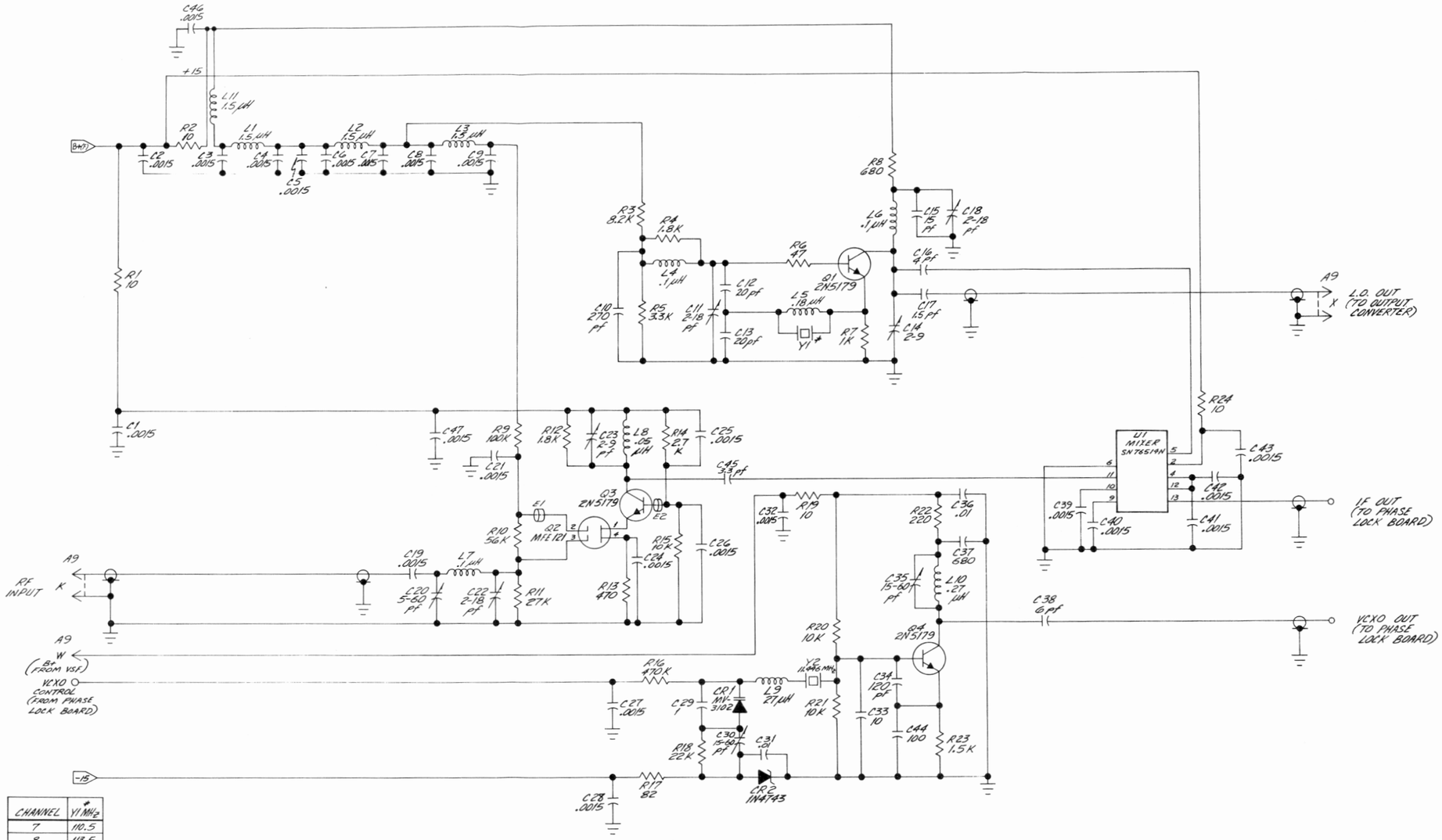
Figure 9-7. Model 6300PL Phase-Locked Modulator Block Diagram



CHANNEL	L5*	Y1* MHz	L3* µH
2	.47 µH	101	.27
3	.47 µH	107	.27
4	.47 µH	113	.27
5	.33 µH	123	.22
6	.33 µH	129	.22

ALL CAPACITOR VALUES GREATER THAN 1 IN PICOFARADS. ALL LESS THAN 1 IN MICROFARADS.

Figure 9-8. RF Low-Band, Schematic Diagram



CHANNEL	Y1 MHz
7	110.5
8	113.5
9	116.5
10	119.5
11	122.5
12	125.5
13	128.5

ALL CAPACITOR VALUES GREATER THAN 1 IN PICOFARADS. ALL LESS THAN 1 IN MICROFARADS.

Figure 9-9. RF High-Band, Schematic Diagram

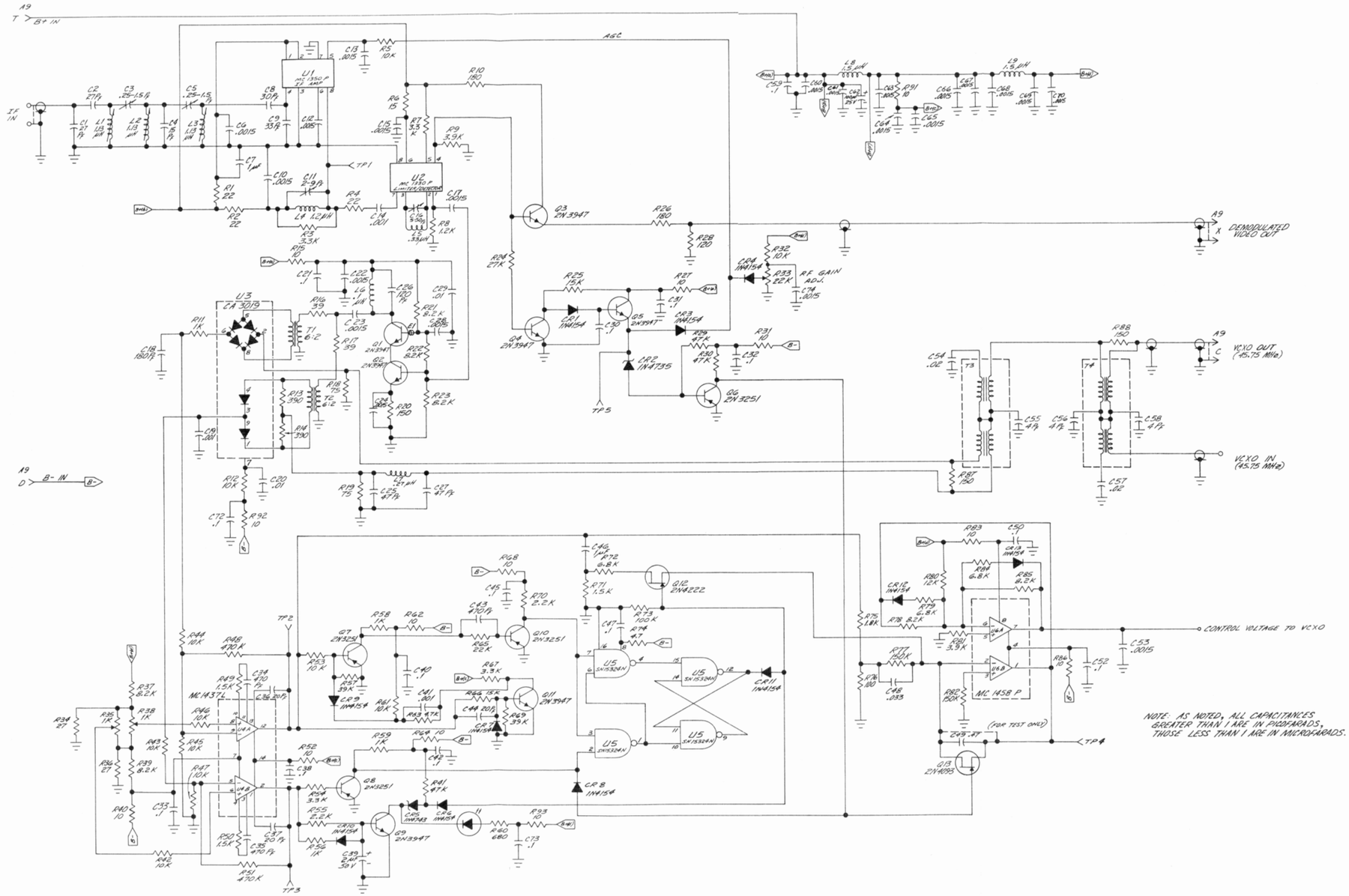


Figure 9-10. Phase Lock Network, Schematic Diagram

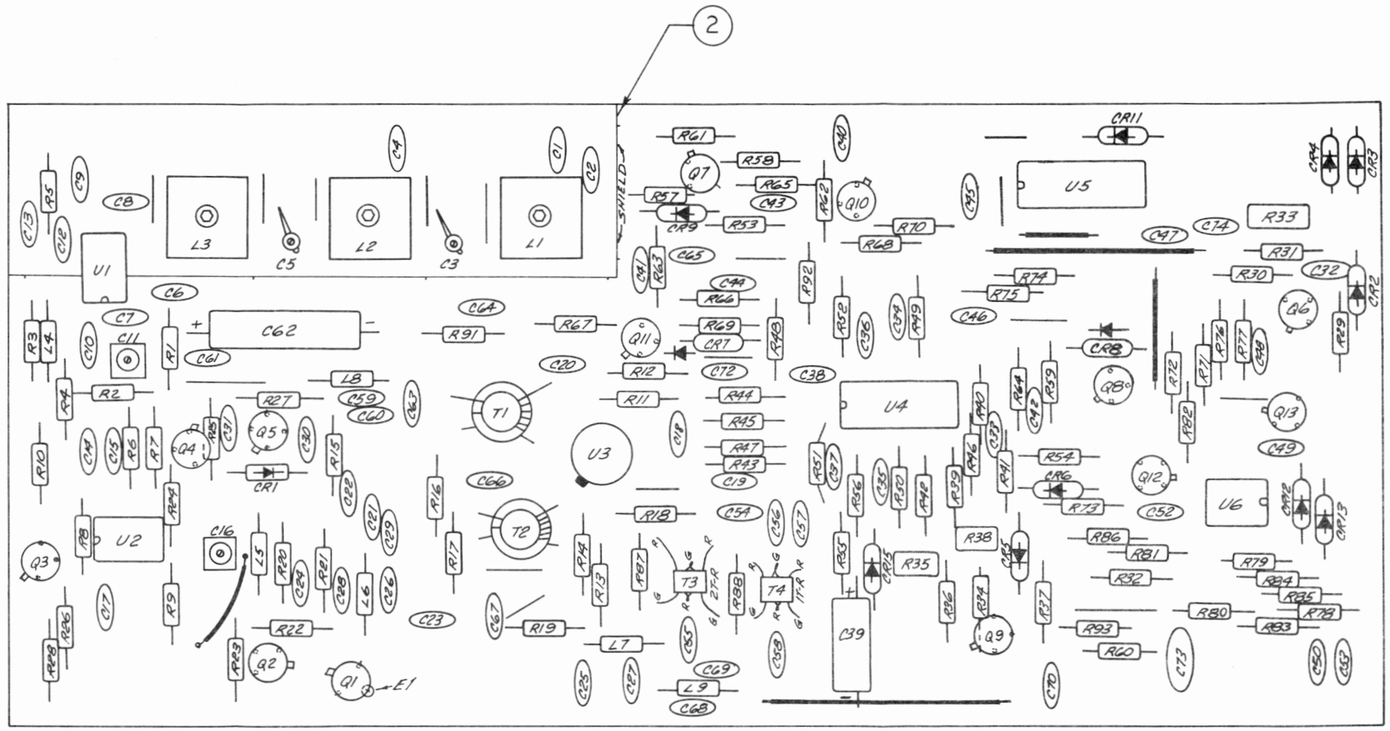
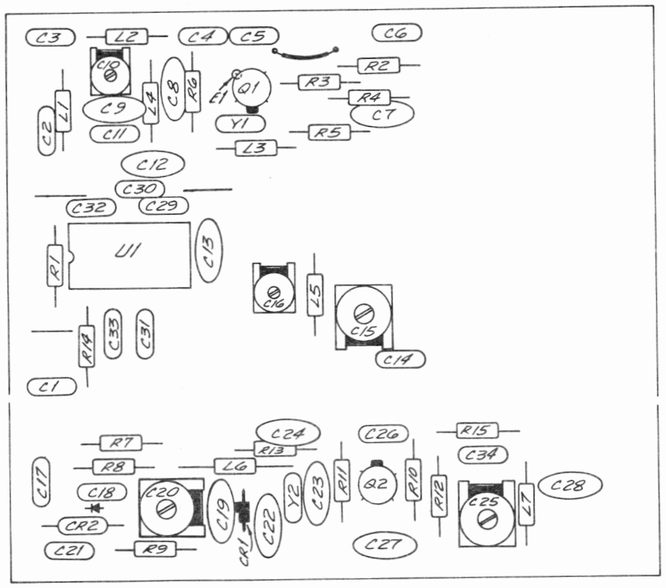
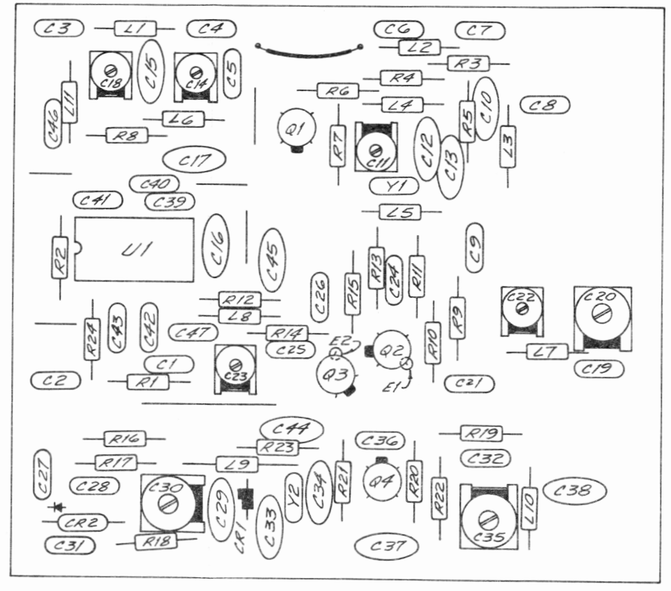


Figure 9-11. Phase Lock Network, PC Board Assembly



a. RF Low-Band



b. RF High-Band

Figure 9-12. PC Board Assembly

PARTS LIST

MODEL 6300PL PHASE LOCK ASSEMBLY

COMP DESIG	S-A PART NUMBER	DESCRIPTION	QTY	UM	MFR	FSCM	MFR PART NO.
1	0123400	PC BOARD PHASE LOCK 6300 PL	1	EA			
2	0123467	IF SHIELD PC BOARD	1	EA			
3	0125714	SCHEMATIC 6300PL PHASE LOCK BOARD		EA			
4	0082343	CAN COIL .512 SQ .84 LG .313 DIA HOLE AL	3	EA	STX	00000	SERIES 479-8Y DESCRIP
C1	0070487	CAPACITR 27 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15ED270J03
C2	0070487	CAPACITR 27 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15ED270J03
C3	0081125	CAPACITR .25-1.5 PF TEFLON TRIMMER PC MT	1	EA	ER	72982	530-000
C4	0073492	CAPACITR 15 PF 500V SILVER MICA 5%	1	EA	A	00656	ADM15C150J500
C5	0073492	CAPACITR 15 PF 500V SILVER MICA 5%	1	EA	A	00656	ADM15C150J500
C6	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C7	0081101	CAPACITR 1 MF 50V CER SQUARE 20%	1	EA	ER	72982	8131-050-651-105M
C8	0070490	CAPACITR 30 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15ED300J03
C9	0070492	CAPACITR 33 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15ED330J03
C10	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C11	0035641	CAPACITR 2-9 PF MIN PC MT	1	EA	AE	73445	HT10KA/29
C12	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C13	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C14	0070544	CAPACITR .001 MF 1KV CER DISC	1	EA	CRL	71590	DD102
C15	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C16	0081536	CAPACITR 5-50 PF MIN PC MT	1	EA	AE	73445	HT10MA/550
C17	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C18	0073497	CAPACITR 180 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15FD181J03
C19	0070544	CAPACITR .001 MF 1KV CER DISC	1	EA	CRL	71590	DD102
C20	0075417	CAPACITR .01 MF 150V CER DISC	1	EA	CRL	71590	DDM-103
C21	0080139	CAPACITR .1 MF 50V CER SQUARE	1	EA	ER	72982	8131-M050-651-104Z
C22	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C23	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C24	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C25	0070498	CAPACITR 47 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15ED470J03
C26	0070519	CAPACITR 120 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15FD121J03
C27	0070498	CAPACITR 47 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15ED470J03
C28	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C29	0075417	CAPACITR .01 MF 150V CER DISC	1	EA	CRL	71590	DDM-103
C30	0080139	CAPACITR .1 MF 50V CER SQUARE	1	EA	ER	72982	8131-M050-651-104Z
C31	0080139	CAPACITR .1 MF 50V CER SQUARE	1	EA	ER	72982	8131-M050-651-104Z
C32	0080139	CAPACITR .1 MF 50V CER SQUARE	1	EA	ER	72982	8131-M050-651-104Z
C33	0080139	CAPACITR .1 MF 50V CER SQUARE	1	EA	ER	72982	8131-M050-651-104Z
C34	0070540	CAPACITR 470 PF 1KV CER DISC	1	EA	CRL	71590	DD-471
C35	0070540	CAPACITR 470 PF 1KV CER DISC	1	EA	CRL	71590	DD-471
C36	0080142	CAPACITR 20 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15ED200J
C37	0080142	CAPACITR 20 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15ED200J
C38	0080139	CAPACITR .1 MF 50V CER SQUARE	1	EA	ER	72982	8131-M050-651-104Z
C39	0078997	CAPACITR 2 MF 50V	1	EA	SP	80183	500D205G050BA7
C40	0080139	CAPACITR .1 MF 50V CER SQUARE	1	EA	ER	72982	8131-M050-651-104Z
C41	0070544	CAPACITR .001 MF 1KV CER DISC	1	EA	CRL	71590	DD102
C42	0080139	CAPACITR .1 MF 50V CER SQUARE	1	EA	ER	72982	8131-M050-651-104Z
C43	0070540	CAPACITR 470 PF 1KV CER DISC	1	EA	CRL	71590	DD-471
C44	0080142	CAPACITR 20 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15ED200J
C45	0080139	CAPACITR .1 MF 50V CER SQUARE	1	EA	ER	72982	8131-M050-651-104Z
C46	0081101	CAPACITR 1 MF 50V CER SQUARE 20%	1	EA	ER	72982	8131-050-651-105M
C47	0080139	CAPACITR .1 MF 50V CER SQUARE	1	EA	ER	72982	8131-M050-651-104Z
C48	0082262	CAPACITR .033 MF 50V CER SQUARE	1	EA	ER	00000	8121-M050-651-333M
C49	0081098	CAPACITR .47 MF 50V CER SQUARE 20%	1	EA	ER	72982	8131-050-651-474M
C50	0080139	CAPACITR .1 MF 50V CER SQUARE	1	EA	ER	72982	8131-M050-651-104Z
C52	0080139	CAPACITR .1 MF 50V CER SQUARE	1	EA	ER	72982	8131-M050-651-104Z
C53	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C54	0081629	CAPACITR .02 MF 30V CER DISC	1	EA	ERT	18796	5835-511-Y5U0-203Z
C55	0035760	CAPACITR 4 PF 500V CER DISC	1	EA	ER	72982	831-COH0-409C
C56	0035760	CAPACITR 4 PF 500V CER DISC	1	EA	ER	72982	831-COH0-409C
C57	0081629	CAPACITR .02 MF 30V CER DISC	1	EA	ERT	18796	5835-511-Y5U0-203Z
C58	0035760	CAPACITR 4 PF 500V CER DISC	1	EA	ER	72982	831-COH0-409C
C59	0080139	CAPACITR .1 MF 50V CER SQUARE	1	EA	ER	72982	8131-M050-651-104Z
C60	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C61	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C62	0070671	CAPACITR 100 MF 25V	1	EA	SP	80183	500D107G025DD7
C63	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C64	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C65	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C66	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C67	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C68	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C69	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C70	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G

PARTS LIST

MODEL 6300PL PHASE LOCK ASSEMBLY -continued

COMP DESIG	S-A PART NUMBER	DESCRIPTION	QTY	UM	MFR	FSCM	MFR PART NO.
C72	0080139	CAPACITR .1 MF 50V CER SQUARE	1	EA	ER	72982	8131-M050-651-104Z
C73	0080139	CAPACITR .1 MF 50V CER SQUARE	1	EA	ER	72982	8131-M050-651-104Z
C74	0080139	CAPACITR .1 MF 50V CER SQUARE	1	EA	ER	72982	8131-M050-651-104Z
CR1	0071142	DIODE 1N4154 SIL 25V 150MA	1	EA	SY	80368	1N4154
CR2	0071143	DIODE 1N4735A SI ZEN 6.2V 5% 1W	1	EA	MOT	80211	1N4735A
CR3	0071142	DIODE 1N4154 SIL 25V 150MA	1	EA	SY	80368	1N4154
CR4	0071142	DIODE 1N4154 SIL 25V 150MA	1	EA	SY	80368	1N4154
CR5	0077811	DIODE 1N4743A SI ZEN 13V 5% 1W	1	EA	MOT	80211	1N4743A
CR6	0071142	DIODE 1N4154 SIL 25V 150MA	1	EA	SY	80368	1N4154
CR7	0071142	DIODE 1N4154 SIL 25V 150MA	1	EA	SY	80368	1N4154
CR8	0071142	DIODE 1N4154 SIL 25V 150MA	1	EA	SY	80368	1N4154
CR9	0071142	DIODE 1N4154 SIL 25V 150MA	1	EA	SY	80368	1N4154
CR10	0071142	DIODE 1N4154 SIL 25V 150MA	1	EA	SY	80368	1N4154
CR11	0071142	DIODE 1N4154 SIL 25V 150MA	1	EA	SY	80368	1N4154
CR12	0071142	DIODE 1N4154 SIL 25V 150MA	1	EA	SY	80368	1N4154
CR13	0071142	DIODE 1N4154 SIL 25V 150MA	1	EA	SY	80368	1N4154
E1	0081718	CORE BEAD FERRITE 7D .138X.037X.150L	1	EA	STK	78488	57-1413
L1	0035988	INDUCTOR 1.13 UH	1	EA			
L2	0035988	INDUCTOR 1.13 UH	1	EA			
L3	0035988	INDUCTOR 1.13 UH	1	EA			
L4	0079842	INDUCTOR 1.2 UH SUBMIN SHLD ENCAP 10%	1	EA	NYT	72259	WEE-WEE-1.2
L5	0079558	INDUCTOR .33 UH SUBMIN SHLD ENCAP 10%	1	EA	NYT	72259	WEE-WEE-.33
L6	0078200	INDUCTOR .1 UH SUBMIN SHLD ENCAP 10%	1	EA	NYT	72259	WEE-WEE .1
L7	0081745	INDUCTOR .27 UH SUBMIN UNSHLD 10%	1	EA	DP	91637	IR-2
L8	0077484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	1	EA	M	76493	70F156A1
L9	0077484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	1	EA	M	76493	70F156A1
Q1	0077147	TRANSSTR 2N3947 NPN SIL	1	EA	MOT	80211	2N3947
Q2	0077147	TRANSSTR 2N3947 NPN SIL	1	EA	MOT	80211	2N3947
Q3	0077147	TRANSSTR 2N3947 NPN SIL	1	EA	MOT	80211	2N3947
Q4	0077147	TRANSSTR 2N3947 NPN SIL	1	EA	MOT	80211	2N3947
Q5	0077147	TRANSSTR 2N3947 NPN SIL	1	EA	MOT	80211	2N3947
Q6	0077148	TRANSSTR 2N3251 PNP SIL	1	EA	MOT	80211	2N3251
Q7	0077148	TRANSSTR 2N3251 PNP SIL	1	EA	MOT	80211	2N3251
Q8	0077148	TRANSSTR 2N3251 PNP SIL	1	EA	MOT	80211	2N3251
Q9	0077147	TRANSSTR 2N3947 NPN SIL	1	EA	MOT	80211	2N3947
Q10	0077148	TRANSSTR 2N3251 PNP SIL	1	EA	MOT	80211	2N3251
Q11	0077147	TRANSSTR 2N3947 NPN SIL	1	EA	MOT	80211	2N3947
Q12	0076446	TRANSSTR 2N4222 FET N-CHNL JUNC	1	EA	MOT	80211	2N4222
Q13	0079660	TRANSSTR 2N4093 FET N-CHNL JUNC	1	EA	MOT	80211	2N4093
R1	0076275	RESISTOR 22 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G220KS
R2	0076275	RESISTOR 22 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G220KS
R3	0071989	RESISTOR 3.3K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G332KS
R4	0076275	RESISTOR 22 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G220KS
R5	0072026	RESISTOR 10K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G103KS
R6	0076276	RESISTOR 15 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G150KS
R7	0071989	RESISTOR 3.3K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G332KS
R8	0071960	RESISTOR 1.2K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G122KS
R9	0071993	RESISTOR 3.9K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G392KS
R10	0071901	RESISTOR 180 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G181KS
R11	0071951	RESISTOR 1.0K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G102KS
R12	0072026	RESISTOR 10K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G103KS
R13	0071920	RESISTOR 390 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G391KS
R14	0071920	RESISTOR 390 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G391KS
R15	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
R16	0076723	RESISTOR 39 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G390KS
R17	0076723	RESISTOR 39 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G390KS
R18	0077524	RESISTOR 75 OHM 1/4W 5% COMP	1	EA	AB	01121	RCR07G750JS
R19	0077524	RESISTOR 75 OHM 1/4W 5% COMP	1	EA	AB	01121	RCR07G750JS
R20	0071897	RESISTOR 150 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G151KS
R21	0072019	RESISTOR 8.2K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G822KS
R22	0072019	RESISTOR 8.2K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G822KS
R23	0072019	RESISTOR 8.2K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G822KS
R24	0072059	RESISTOR 27K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G273KS
R25	0072039	RESISTOR 15K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G153KS
R26	0071901	RESISTOR 180 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G181KS
R27	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
R28	0071894	RESISTOR 120 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G121KS
R29	0072077	RESISTOR 47K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G473KS
R30	0072077	RESISTOR 47K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G473KS
R31	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
R32	0072026	RESISTOR 10K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G103KS
R33	0082314	POT 25K OHM .2W COMP PC MT VERT	1	EA	PIH	00000	PT10
R34	0071853	RESISTOR 27 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G270KS

PARTS LIST

MODEL 6300PL PHASE LOCK ASSEMBLY-continued

COMP DESIG	S-A PART NUMBER	DESCRIPTION	QTY	UM	MFR	FSCM	MFR PART NO.
R35	0082313	POT 1K OHM .2W COMP PC MT VERT	1	EA	PIH	00000	PT10
R36	0071853	RESISTOR 27 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G270KS
R37	0072019	RESISTOR 8.2K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G822KS
R38	0082313	POT 1K OHM .2W COMP PC MT VERT	1	EA	PIH	00000	PT10
R39	0072019	RESISTOR 8.2K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G822KS
R40	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
R41	0072077	RESISTOR 47K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G473KS
R42	0072026	RESISTOR 10K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G103KS
R43	0072026	RESISTOR 10K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G103KS
R44	0072026	RESISTOR 10K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G103KS
R45	0072026	RESISTOR 10K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G103KS
R46	0072026	RESISTOR 10K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G103KS
R47	0072026	RESISTOR 10K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G103KS
R48	0072165	RESISTOR 470K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G474KS
R49	0071966	RESISTOR 1.5K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G152KS
R50	0071966	RESISTOR 1.5K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G152KS
R51	0072165	RESISTOR 470K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G474KS
R52	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
R53	0072026	RESISTOR 10K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G103KS
R54	0071989	RESISTOR 3.3K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G332KS
R55	0071977	RESISTOR 2.2K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G222KS
R56	0071951	RESISTOR 1.0K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G102KS
R57	0072068	RESISTOR 39K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G393KS
R58	0071951	RESISTOR 1.0K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G102KS
R59	0071951	RESISTOR 1.0K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G102KS
R60	0071938	RESISTOR 680 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G681KS
R61	0072026	RESISTOR 10K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G103KS
R62	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
R63	0072002	RESISTOR 4.7K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G472KS
R64	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
R65	0072054	RESISTOR 22K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G223KS
R66	0072039	RESISTOR 15K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G153KS
R67	0071989	RESISTOR 3.3K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G332KS
R68	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
R69	0072068	RESISTOR 39K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G393KS
R70	0071977	RESISTOR 2.2K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G222KS
R71	0071966	RESISTOR 1.5K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G152KS
R72	0072014	RESISTOR 6.8K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G682KS
R73	0072113	RESISTOR 100K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G104KS
R74	0076282	RESISTOR 4.7 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G4R7KS
R75	0071966	RESISTOR 1.5K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G152KS
R76	0071887	RESISTOR 100 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G101KS
R77	0072123	RESISTOR 150K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G154KS
R78	0072019	RESISTOR 8.2K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G822KS
R79	0072014	RESISTOR 6.8K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G682KS
R80	0072034	RESISTOR 12K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G123KS
R81	0071993	RESISTOR 3.9K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G392KS
R82	0072123	RESISTOR 150K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G154KS
R83	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
R84	0072014	RESISTOR 6.8K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G682KS
R85	0072019	RESISTOR 8.2K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G822KS
R86	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
R87	0071897	RESISTOR 150 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G151KS
R88	0071897	RESISTOR 150 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G151KS
R91	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
R92	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
R93	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
T1	0108840	TOROID 2 TURNS PRI 6 TURNS SEC	1	EA			
T2	0108840	TOROID 2 TURNS PRI 6 TURNS SEC	1	EA			
T3	0123463	TRANSFORMER SPLITTER 1T,3T	1	EA			
T4	0123462	TRANSFORMER SPLITTER 1T,2T	1	EA			
U1	0082318	IC AMPL RF/IF	1	EA	MOT	00000	MC1350P
U2	0082317	IC AMPL LIMITER/DETECTOR	1	EA	MOT	00000	MC1330P
U3	0081100	IC DIODE ARRAY 120 MW MAX	1	EA	RCA	79089	CA3019
U4	0081648	IC DUAL OP AMP	1	EA	MOT	80211	MC1437L
U5	0082316	IC HNIL QUAD 2-IN NAND GATE	1	EA	TI	00000	SN15324N
U6	0081840	IC OP AMPL DUAL 741	1	EA	MOT	80211	MC1458P-1

PARTS LIST

MODEL 6300PL LOW-BAND ASSEMBLY, CHANNEL 2

COMP DESIG	S-A PART NUMBER	DESCRIPTION	QTY	UM	MFR	FSCM	MFR PART NO.
1	0123460	PC BOARD RF 6300 PL	1	EA			
2	0125715	SCHEMATIC RF LOW BAND 6300PL MODULATOR		EA			
C1	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C2	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C3	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C4	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C5	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C6	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C7	0070531	CAPACITR 270 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15FD271J03
C8	0081923	CAPACITR 6 PF 500V CER DISC	1	EA	ER	72982	831-C0G0-609C
C9	0070492	CAPACITR 33 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15ED330J03
C10	0035642	CAPACITR 2-18 PF MIN PC MT	1	EA	AE	73445	HT10KA/218
C11	0070508	CAPACITR 62 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15ED620J03
C12	0081923	CAPACITR 6 PF 500V CER DISC	1	EA	ER	72982	831-C0G0-609C
C13	0080142	CAPACITR 20 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15ED200J
C14	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C15	0081536	CAPACITR 5-50 PF MIN PC MT	1	EA	AE	73445	HT10MA/550
C16	0035642	CAPACITR 2-18 PF MIN PC MT	1	EA	AE	73445	HT10KA/218
C17	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C18	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C19	0081746	CAPACITR 1 PF 500V CER DISC	1	EA	ER	72982	831-C0G0-109C
C20	0081536	CAPACITR 5-50 PF MIN PC MT	1	EA	AE	73445	HT10MA/550
C21	0075417	CAPACITR .01 MF 150V CER DISC	1	EA	CRL	71590	DDM-103
C22	0070470	CAPACITR 10 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15CD100J03
C23	0070519	CAPACITR 120 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15FD121J03
C24	0070517	CAPACITR 100 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15FD101J03
C25	0081536	CAPACITR 5-50 PF MIN PC MT	1	EA	AE	73445	HT10MA/550
C26	0075417	CAPACITR .01 MF 150V CER DISC	1	EA	CRL	71590	DDM-103
C27	0070542	CAPACITR 680 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD19FD681J03
C28	0081923	CAPACITR 6 PF 500V CER DISC	1	EA	ER	72982	831-C0G0-609C
C29	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C30	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C31	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C32	0075417	CAPACITR .01 MF 150V CER DISC	1	EA	CRL	71590	DDM-103
C33	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C34	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
CR1	0082311	DIODE MV3102 VARACTOR SIL RIBBON LEADS	1	EA	MOT	00000	MV3103
CR2	0077811	DIODE 1N4743A SI ZEN 13V 5% 1W	1	EA	MOT	80211	1N4743A
E1	0081718	CORE BEAD FERRITE 7D .138X.037X.150L	1	EA	STK	78488	57-1413
L1	0077484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	1	EA	M	76493	70F156A1
L2	0077484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	1	EA	M	76493	70F156A1
L3	0081745	INDUCTOR .27 UH SUBMIN UNSHLD 10%	1	EA	DP	91637	IR-2
L4	0079847	INDUCTOR .15 UH SUBMIN SHLD ENCAP 10%	1	EA	NYT	72259	WEE-WEE-.15
L5	0078201	INDUCTOR .47 UH SUBMIN SHLD ENCAP 10%	1	EA	NYT	72259	WEE-WEE .47
L6	0079317	INDUCTOR 27 UH SUBMIN UNSHLD MOLDED 10%	1	EA	NYT	72259	DD-27
L7	0081745	INDUCTOR .27 UH SUBMIN UNSHLD 10%	1	EA	DP	91637	IR-2
Q1	0035669	TRANSSTR 2N5179 SIL NPN	1	EA	MOT	80211	2N5179
Q2	0035669	TRANSSTR 2N5179 SIL NPN	1	EA	MOT	80211	2N5179
R1	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
R2	0072011	RESISTOR 5.6K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G562KS
R3	0071897	RESISTOR 150 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G151KS
R4	0071977	RESISTOR 2.2K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G222KS
R5	0071951	RESISTOR 1.0K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G102KS
R6	0071951	RESISTOR 1.0K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G102KS
R7	0072165	RESISTOR 470K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G474KS
R8	0071879	RESISTOR 82 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G820KS
R9	0072054	RESISTOR 22K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G223KS
R10	0072026	RESISTOR 10K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G103KS
R11	0072026	RESISTOR 10K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G103KS
R12	0071907	RESISTOR 220 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G221KS
R13	0071966	RESISTOR 1.5K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G152KS
R14	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
R15	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
U1	0081795	IC BALANCED MIXER	1	EA	TI	01295	SN76514N
Y1	0082321	CRYSTAL 101.00 MHZ .0025% SERIES RES	1	EA	ERT	00000	HC/18U HOLDER
Y2	0082320	CRYSTAL 11.446 MHZ .0025% SERIES RES	1	EA	ERT	00000	HC/18U HOLDER

PARTS LIST

MODEL 6300PL LOW-BAND ASSEMBLY, CHANNEL 2

COMP DESIG	S-A PART NUMBER	DESCRIPTION	QTY	UM	MFR	FSCM	MFR PART NO.
1	0123401	PC BOARD ASSY 6300PL PHASE LOCK BOARD	1	EA			
2	0125662	PC BOARD ASSY 6300PL LOW BAND CH 2	1	EA			
3	0123464	PANEL FRONT 63COPL	1	EA			
4	0106037	HANDLE FRONT PANEL PLUG-IN	2	EA			
5	0106024	PLATE SLIDE PLUG-IN MODULATOR	1	EA			
6	0106022	PANEL SIDE PLUG-IN	1	EA			
7	0078531	CONN RECT BODY W/C CONTACTS 20 POS RECEP	1	EA	BDW	09922	MS20PM-61
8	0078532	CONN CONTACT MALE COAX CRIMP .1 C CABLE	4	EA	BDW	09922	RCDXK-1
9	0078535	CONN CONTACT FEMALE CRIMP NO. 24 WIRE	4	EA	BDW	09922	RC24M-9
10	0077322	SCREW 4-40 X 1/4 PAN HD,TAPTITE,CAD PLT	4	EA	CS	72228	BY DESCRIPTION
11	0072321	SCREW 4-40 X 3/8 F HD,82 DEG,SST	4	EA	XZ	00000	PER MS51959-15
12	0072310	SCREW 4-40 X 3/16 F HD,82 DEG,SST,UNDRCT	12	EA	XZ	00000	PER MS51959-12
13	0081882	LAMP LED FLV110 RED LENS	1	EA	FMP	00000	FLV110
14	0082315	LAMP LED MOUNTING CLIP FOR FLV117	1	EA	FMP	00000	FLS010
15	0105279	CHASSIS PLUG-IN RF CONNECTOR MODULATOR	1	EA			
16	0072861	SPACER 4-40 ID 3/16 OD 1/2 L NI PLT BRS	4	EA	FS	73734	9174
17	0072319	SCREW 4-40 X 5/16 PAN HD,SST	8	EA	XZ	00000	PER MS51957-14

PARTS LIST

MODEL 6300PL LOW-BAND ASSEMBLY, CHANNEL 3

COMP DESIG	S-A PART NUMBER	DESCRIPTION	QTY	UM	MFR	FSCM	MFR PART NO.
1	0123460	PC BOARD RF 6300 PL	1	EA			
2	0125715	SCHEMATIC RF LOW BAND 6300PL MODULATOR		EA			
C1	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C2	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C3	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C4	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C5	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C6	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C7	0070531	CAPACITR 270 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15FD271J03
C8	0081923	CAPACITR 6 PF 500V CER DISC	1	EA	ER	72982	831-C0G0-609C
C9	0070492	CAPACITR 33 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15ED330J03
C10	0035642	CAPACITR 2-18 PF MIN PC MT	1	EA	AE	73445	HT10KA/218
C11	0070508	CAPACITR 62 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15ED620J03
C12	0081923	CAPACITR 6 PF 500V CER DISC	1	EA	ER	72982	831-C0G0-609C
C13	0080142	CAPACITR 20 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15ED200J
C14	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C15	0081536	CAPACITR 5-50 PF MIN PC MT	1	EA	AE	73445	HT10MA/550
C16	0035642	CAPACITR 2-18 PF MIN PC MT	1	EA	AE	73445	HT10KA/218
C17	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C18	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C19	0081746	CAPACITR 1 PF 500V CER DISC	1	EA	ER	72982	831-C0G0-109C
C20	0081536	CAPACITR 5-50 PF MIN PC MT	1	EA	AE	73445	HT10MA/550
C21	0075417	CAPACITR .01 MF 150V CER DISC	1	EA	CRL	71590	DDM-103
C22	0070470	CAPACITR 10 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15CD100J03
C23	0070519	CAPACITR 120 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15FD121J03
C24	0070517	CAPACITR 100 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15FD101J03
C25	0081536	CAPACITR 5-50 PF MIN PC MT	1	EA	AE	73445	HT10MA/550
C26	0075417	CAPACITR .01 MF 150V CER DISC	1	EA	CRL	71590	DDM-103
C27	0070542	CAPACITR 680 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD19FD681J03
C28	0081923	CAPACITR 6 PF 500V CER DISC	1	EA	ER	72982	831-C0G0-609C
C29	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C30	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C31	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C32	0075417	CAPACITR .01 MF 150V CER DISC	1	EA	CRL	71590	DDM-103
C33	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C34	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
CR1	0082311	DIODE MV3102 VARACTOR SIL RIBBON LEADS	1	EA	MOT	00000	MV3103
CR2	0077811	DIODE 1N4743A SI ZEN 13V 5% 1W	1	EA	MOT	80211	1N4743A
E1	0081718	CORE BEAD FERRITE 7D .138X.037X.150L	1	EA	STK	78488	57-1413
L1	0077484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	1	EA	M	76493	70F156A1
L2	0077484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	1	EA	M	76493	70F156A1
L3	0081745	INDUCTOR .27 UH SUBMIN UNSHLD 10%	1	EA	DP	91637	IR-2
L4	0079847	INDUCTOR .15 UH SUBMIN SHLD ENCAP 10%	1	EA	NYT	72259	WEE-WEE-.15
L5	0078201	INDUCTOR .47 UH SUBMIN SHLD ENCAP 10%	1	EA	NYT	72259	WEE-WEE .47
L6	0079317	INDUCTOR 27 UH SUBMIN UNSHLD MOLDED 10%	1	EA	NYT	72259	DD-27
L7	0081745	INDUCTOR .27 UH SUBMIN UNSHLD 10%	1	EA	DP	91637	IR-2
Q1	0035669	TRANSSTR 2N5179 SIL NPN	1	EA	MOT	80211	2N5179
Q2	0035669	TRANSSTR 2N5179 SIL NPN	1	EA	MOT	80211	2N5179
R1	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
R2	0072011	RESISTOR 5.6K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G562KS
R3	0071897	RESISTOR 150 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G151KS
R4	0071977	RESISTOR 2.2K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G222KS
R5	0071951	RESISTOR 1.0K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G102KS
R6	0071951	RESISTOR 1.0K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G102KS
R7	0072165	RESISTOR 470K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G474KS
R8	0071879	RESISTOR 82 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G820KS
R9	0072054	RESISTOR 22K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G223KS
R10	0072026	RESISTOR 10K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G103KS
R11	0072026	RESISTOR 10K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G103KS
R12	0071907	RESISTOR 220 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G221KS
R13	0071966	RESISTOR 1.5K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G152KS
R14	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
R15	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
U1	0081795	IC BALANCED MIXER	1	EA	TI	01295	SN76514N
Y1	0082322	CRYSTAL 107.00 MHZ .0025% SERIES RES	1	EA	ERT	00000	HC/18U HOLDER
Y2	0082320	CRYSTAL 11.446 MHZ .0025% SERIES RES	1	EA	ERT	00000	HC/18U HOLDER

PARTS LIST

MODEL 6300PL LOW-BAND ASSEMBLY, CHANNEL 3

COMP DESIG	S-A PART NUMBER	DESCRIPTION	QTY	UM	MFR	FSCM	MFR PART NO.
1	0123401	PC BOARD ASSY 6300PL PHASE LOCK BOARD	1	EA			
2	0125663	PC BOARD ASSY 6300PL LOW BAND CH 3	1	EA			
3	0123464	PANEL FRONT 6300PL	1	EA			
4	0106037	HANDLE FRONT PANEL PLUG-IN	2	EA			
5	0106024	PLATE SLIDE PLUG-IN MODULATOR	1	EA			
6	0106022	PANEL SIDE PLUG-IN	1	EA			
7	0078531	CONN RECT BODY W/O CONTACTS 20 POS RECEP	1	EA	BDW	09922	MS20PM-61
8	0078532	CONN CONTACT MALE COAX CRIMP .1 C CABLE	4	EA	BDW	09922	RCDXK-1
9	0078535	CONN CONTACT FEMALE CRIMP NO. 24 WIRE	4	EA	BDW	09922	RC24M-9
10	0077322	SCREW 4-40 X 1/4 PAN HD,TAPTITE,CAD PLT	4	EA	CS	72228	BY DESCRIPTION
11	0072321	SCREW 4-40 X 3/8 F HD,82 DEG,SST	4	EA	XZ	00000	PER MS51959-15
12	0072310	SCREW 4-40 X 3/16 F HD,82 DEG,SST,UNDRCT	12	EA	XZ	00000	PER MS51959-12
13	0081882	LAMP LED FLV110 RED LENS	1	EA	FMP	00000	FLV110
14	0082315	LAMP LED MOUNTING CLIP FOR FLV117	1	EA	FMP	00000	FLS010
15	0105279	CHASSIS PLUG-IN RF CONNECTOR MODULATOR	1	EA			
16	0072861	SPACER 4-40 ID 3/16 OD 1/2 L NI PLT BRS	4	EA	FS	73734	9174
17	0072319	SCREW 4-40 X 5/16 PAN HD,SST	8	EA	XZ	00000	PER MS51957-14

PARTS LIST

MODEL 6300PL LOW-BAND ASSEMBLY, CHANNEL 4

COMP DESIG	S-A PART NUMBER	DESCRIPTION	QTY	UM	MFR	FSCM	MFR PART NO.
1	0123460	PC BOARD RF 6300 PL	1	EA			
2	0125715	SCHEMATIC RF LOW BAND 6300PL MODULATOR		EA			
C1	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C2	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C3	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C4	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C5	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C6	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C7	0070531	CAPACITR 270 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15FD271J03
C8	0081923	CAPACITR 6 PF 500V CER DISC	1	EA	ER	72982	831-C0G0-609C
C9	0070492	CAPACITR 33 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15ED330J03
C10	0035642	CAPACITR 2-18 PF MIN PC MT	1	EA	AE	73445	HT10KA/218
C11	0070508	CAPACITR 62 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15ED620J03
C12	0081923	CAPACITR 6 PF 500V CER DISC	1	EA	ER	72982	831-C0G0-609C
C13	0080142	CAPACITR 20 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15ED200J
C14	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C15	0081536	CAPACITR 5-50 PF MIN PC MT	1	EA	AE	73445	HT10MA/550
C16	0035642	CAPACITR 2-18 PF MIN PC MT	1	EA	AE	73445	HT10KA/218
C17	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C18	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C19	0081746	CAPACITR 1 PF 500V CER DISC	1	EA	ER	72982	831-C0G0-109C
C20	0081536	CAPACITR 5-50 PF MIN PC MT	1	EA	AE	73445	HT10MA/550
C21	0075417	CAPACITR .01 MF 150V CER DISC	1	EA	CRL	71590	DDM-103
C22	0070470	CAPACITR 10 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15CD100J03
C23	0070519	CAPACITR 120 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15FD121J03
C24	0070517	CAPACITR 100 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15FD101J03
C25	0081536	CAPACITR 5-50 PF MIN PC MT	1	EA	AE	73445	HT10MA/550
C26	0075417	CAPACITR .01 MF 150V CER DISC	1	EA	CRL	71590	DDM-103
C27	0070542	CAPACITR 680 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD19FD681J03
C28	0081923	CAPACITR 6 PF 500V CER DISC	1	EA	ER	72982	831-C0G0-609C
C29	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C30	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C31	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C32	0075417	CAPACITR .01 MF 150V CER DISC	1	EA	CRL	71590	DDM-103
C33	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C34	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
CR1	0082311	DIODE MV3102 VARACTOR SIL RIBBON LEADS	1	EA	MOT	00000	MV3103
CR2	0077811	DIODE 1N4743A SI ZEN 13V 5% 1W	1	EA	MOT	80211	1N4743A
E1	0081718	CORE BEAD FERRITE 7D .138X.037X.150L	1	EA	STK	78488	57-1413
L1	0077484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	1	EA	M	76493	70F156A1
L2	0077484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	1	EA	M	76493	70F156A1
L3	0081745	INDUCTOR .27 UH SUBMIN UNSHLD 10%	1	EA	DP	91637	IR-2
L4	0079847	INDUCTOR .15 UH SUBMIN SHLD ENCAP 10%	1	EA	NYT	72259	WEE-WEE-.15
L5	0078201	INDUCTOR .47 UH SUBMIN SHLD ENCAP 10%	1	EA	NYT	72259	WEE-WEE .47
L6	0079317	INDUCTOR 27 UH SUBMIN UNSHLD MOLDED 10%	1	EA	NYT	72259	DD-27
L7	0081745	INDUCTOR .27 UH SUBMIN UNSHLD 10%	1	EA	DP	91637	IR-2
Q1	0035669	TRANSSTR 2N5179 SIL NPN	1	EA	MOT	80211	2N5179
Q2	0035669	TRANSSTR 2N5179 SIL NPN	1	EA	MOT	80211	2N5179
R1	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
R2	0072011	RESISTOR 5.6K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G562KS
R3	0071847	RESISTOR 150 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G151KS
R4	0071977	RESISTOR 2.2K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G222KS
R5	0071951	RESISTOR 1.0K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G102KS
R6	0071951	RESISTOR 1.0K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G102KS
R7	0072165	RESISTOR 470K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G474KS
R8	0071879	RESISTOR 82 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G820KS
R9	0072054	RESISTOR 22K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G223KS
R10	0072026	RESISTOR 10K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G103KS
R11	0072026	RESISTOR 10K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G103KS
R12	0071907	RESISTOR 220 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G221KS
R13	0071966	RESISTOR 1.5K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G152KS
R14	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
R15	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
U1	0081795	IC BALANCED MIXER	1	EA	TI	01295	SN76514N
Y1	0082324	CRYSTAL 113.00 MHZ .0025% SERIES RES	1	EA	ERT	00000	HC/18U HOLDER
Y2	0082320	CRYSTAL 11.446 MHZ .0025% SERIES RES	1	EA	ERT	00000	HC/18U HOLDER

PARTS LIST

MODEL 6300PL LOW-BAND ASSEMBLY, CHANNEL 4

COMP DESIG	S-A PART NUMBER	DESCRIPTION	QTY	UM	MFR	FSCM	MFR PART NO.
1	0123401	PC BOARD ASSY 6300PL PHASE LOCK BOARD	1	EA			
2	0125664	PC BOARD ASSY 6300PL LOW BAND CH 4	1	EA			
3	0123464	PANEL FRONT 6300PL	1	EA			
4	0106037	HANDLE FRONT PANEL PLUG-IN	2	EA			
5	0106024	PLATE SLIDE PLUG-IN MODULATOR	1	EA			
6	0106022	PANEL SIDE PLUG-IN	1	EA			
7	0078531	CONN RECT BODY W/O CONTACTS 20 POS RECEP	1	EA	BDW	09922	MS20PM-61
8	0078532	CONN CONTACT MALE COAX CRIMP .1 C CABLE	4	EA	BDW	09922	RCDXK-1
9	0078535	CONN CONTACT FEMALE CRIMP AC .24 WIRE	4	EA	BDW	09922	RC24M-6
10	0077322	SCREW 4-40 X 1/4 PAN HD,TAPTITE,CAD PLT	4	EA	CS	72228	BY DESCRIPTION
11	0072321	SCREW 4-40 X 3/8 F HD,82 DEG,SST	4	EA	XZ	00000	PER MS51959-15
12	0072310	SCREW 4-40 X 3/16 F HD,82 DEG,SST,UNDRCT	12	EA	XZ	00000	PER MS51959-12
13	0081882	LAMP LED FLV110 RED LENS	1	EA	FMP	00000	FLV110
14	0082315	LAMP LED MOUNTING CLIP FOR FLV117	1	EA	FMP	00000	FLS010
15	0105279	CHASSIS PLUG-IN RF CONNECTOR MODULATOR	1	EA			
16	0072861	SPACER 4-40 ID 3/16 OD 1/2 L NI PLT BRS	4	EA	FS	73734	9174
17	0072319	SCREW 4-40 X 5/16 PAN HD,SST	8	EA	XZ	00000	PER MS51957-14

PARTS LIST

MODEL 6300PL LOW-BAND ASSEMBLY, CHANNEL 5

COMP DESIG	S-A PART NUMBER	DESCRIPTION	QTY	UM	MFR	FSCM	MFR PART NO.
1	0123460	PC BOARD RF 6300 PL	1	EA			
2	0125715	SCHEMATIC RF LOW BAND 6300PL MODULATOR		EA			
C1	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C2	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C3	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C4	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C5	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C6	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C7	0070531	CAPACITR 270 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15FD271J03
C8	0081923	CAPACITR 6 PF 500V CER DISC	1	EA	ER	72982	831-COGO-609C
C9	0070492	CAPACITR 33 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15ED330J03
C10	0035642	CAPACITR 2-18 PF MIN PC MT	1	EA	AE	73445	HT10KA/218
C11	0070508	CAPACITR 62 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15ED620J03
C12	0081923	CAPACITR 6 PF 500V CER DISC	1	EA	ER	72982	831-COGO-609C
C13	0080142	CAPACITR 20 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15ED200J
C14	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C15	0081536	CAPACITR 5-50 PF MIN PC MT	1	EA	AE	73445	HT10MA/550
C16	0035642	CAPACITR 2-18 PF MIN PC MT	1	EA	AE	73445	HT10KA/218
C17	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C18	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C19	0081746	CAPACITR 1 PF 500V CER DISC	1	EA	ER	72982	831-COGO-109C
C20	0081536	CAPACITR 5-50 PF MIN PC MT	1	EA	AE	73445	HT10MA/550
C21	0075417	CAPACITR .01 MF 150V CER DISC	1	EA	CRL	71590	DDM-103
C22	0070470	CAPACITR 10 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15CD100J03
C23	0070519	CAPACITR 120 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15FD121J03
C24	0070517	CAPACITR 100 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15FD101J03
C25	0081536	CAPACITR 5-50 PF MIN PC MT	1	EA	AE	73445	HT10MA/550
C26	0075417	CAPACITR .01 MF 150V CER DISC	1	EA	CRL	71590	DDM-103
C27	0070542	CAPACITR 680 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD19FD681J03
C28	0081923	CAPACITR 6 PF 500V CER DISC	1	EA	ER	72982	831-COGO-609C
C29	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C30	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C31	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C32	0075417	CAPACITR .01 MF 150V CER DISC	1	EA	CRL	71590	DDM-103
C33	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C34	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
CR1	0082311	DIODE MV3102 VARACTOR SIL RIBBON LEADS	1	EA	MOT	00000	MV3103
CR2	0077811	DIODE 1N4743A SI ZEN 13V 5% 1W	1	EA	MOT	80211	1N4743A
E1	0081718	CORE BEAD FERRITE 7D .138X.037X.150L	1	EA	STK	78488	57-1413
L1	0077484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	1	EA	M	76493	70F156A1
L2	0077484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	1	EA	M	76493	70F156A1
L3	0081663	INDUCTOR .22 UH SUBMIN UNSHLD 10%	1	EA	DP	91637	IR-2
L4	0079847	INDUCTOR .15 UH SUBMIN SHLD ENCAP 10%	1	EA	NYT	72259	WEE-WEE-.15
L5	0080801	INDUCTOR .33 UH MIN SHLD MOLDED 10%	1	EA	ASE	09021	15S-R33K
L6	0079317	INDUCTOR 27 UH SUBMIN UNSHLD MOLDED 10%	1	EA	NYT	72259	DD-27
L7	0081745	INDUCTOR .27 UH SUBMIN UNSHLD 10%	1	EA	DP	91637	IR-2
Q1	0035669	TRANSSTR 2N5179 SIL NPN	1	EA	MOT	80211	2N5179
Q2	0035669	TRANSSTR 2N5179 SIL NPN	1	EA	MOT	80211	2N5179
R1	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
R2	0072011	RESISTOR 5.6K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G562KS
R3	0071897	RESISTOR 150 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G151KS
R4	0071977	RESISTOR 2.2K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G222KS
R5	0071951	RESISTOR 1.0K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G102KS
R6	0071951	RESISTOR 1.0K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G102KS
R7	0072165	RESISTOR 470K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G474KS
R8	0071879	RESISTOR 82 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G820KS
R9	0072054	RESISTOR 22K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G223KS
R10	0072026	RESISTOR 10K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G103KS
R11	0072026	RESISTOR 10K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G103KS
R12	0071907	RESISTOR 220 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G221KS
R13	0071966	RESISTOR 1.5K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G152KS
R14	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
R15	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
U1	0081795	IC BALANCED MIXER	1	EA	TI	01295	SN76514N
Y1	0082329	CRYSTAL 123.00 MHZ .0025% SERIES RES	1	EA	ERT	00000	HC/18U HOLDER
Y2	0082320	CRYSTAL 11.446 MHZ .0025% SERIES RES	1	EA	ERT	00000	HC/18U HOLDER

PARTS LIST

MODEL 6300PL LOW-BAND ASSEMBLY, CHANNEL 6

COMP DESIG	S-A PART NUMBER	DESCRIPTION	QTY	UM	MFR	FSCM	MFR PART NO.
1	0123460	PC BOARD RF 6300 PL	1	EA			
2	0125715	SCHEMATIC RF LOW BAND 6300PL MODULATOR		EA			
C1	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C2	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C3	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C4	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C5	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C6	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C7	0070531	CAPACITR 270 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15FD271J03
C8	0081923	CAPACITR 6 PF 500V CER DISC	1	EA	ER	72982	831-COGO-609C
C9	0070492	CAPACITR 33 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15ED330J03
C10	0035642	CAPACITR 2-18 PF MIN PC MT	1	EA	AE	73445	HT10KA/218
C11	0070508	CAPACITR 62 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15ED620J03
C12	0081923	CAPACITR 6 PF 500V CER DISC	1	EA	ER	72982	831-COGO-609C
C13	0080142	CAPACITR 20 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15ED200J
C14	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C15	0081536	CAPACITR 5-50 PF MIN PC MT	1	EA	AE	73445	HT10MA/550
C16	0035642	CAPACITR 2-18 PF MIN PC MT	1	EA	AE	73445	HT10KA/218
C17	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C18	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C19	0081746	CAPACITR 1 PF 500V CER DISC	1	EA	ER	72982	831-COGO-109C
C20	0081536	CAPACITR 5-50 PF MIN PC MT	1	EA	AE	73445	HT10MA/550
C21	0075417	CAPACITR .01 MF 150V CER DISC	1	EA	CRL	71590	DDM-103
C22	0070470	CAPACITR 10 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15CD100J03
C23	0070519	CAPACITR 120 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15FD121J03
C24	0070517	CAPACITR 100 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15FD101J03
C25	0081536	CAPACITR 5-50 PF MIN PC MT	1	EA	AE	73445	HT10MA/550
C26	0075417	CAPACITR .01 MF 150V CER DISC	1	EA	CRL	71590	DDM-103
C27	0070542	CAPACITR 680 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD19FD681J03
C28	0081923	CAPACITR 6 PF 500V CER DISC	1	EA	ER	72982	831-COGO-609C
C29	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C30	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C31	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C32	0075417	CAPACITR .01 MF 150V CER DISC	1	EA	CRL	71590	DDM-103
C33	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C34	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
CR1	0082311	DIODE MV3102 VARACTOR SIL RIBBON LEADS	1	EA	MOT	00000	MV3103
CR2	0077811	DIODE 1N4743A SI ZEN 13V 5% 1W	1	EA	MOT	80211	1N4743A
E1	0081718	CORE BEAD FERRITE 7D .138X.037X.150L	1	EA	STK	78488	57-1413
L1	0077484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	1	EA	M	76493	70F156A1
L2	0077484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	1	EA	M	76493	70F156A1
L3	0081663	INDUCTOR .22 UH SUBMIN UNSHLD 10%	1	EA	DP	91637	IR-2
L4	0079847	INDUCTOR .15 UH SUBMIN SHLD ENCAP 10%	1	EA	NYT	72259	WEE-WEE-.15
L5	0080801	INDUCTOR .33 UH MIN SHLD MOLDED 10%	1	EA	ASE	09021	15S-R33K
L6	0079317	INDUCTOR 27 UH SUBMIN UNSHLD MOLDED 10%	1	EA	NYT	72259	DD-27
L7	0081745	INDUCTOR .27 UH SUBMIN UNSHLD 10%	1	EA	DP	91637	IR-2
Q1	0035669	TRANSSTR 2N5179 SIL NPN	1	EA	MOT	80211	2N5179
Q2	0035669	TRANSSTR 2N5179 SIL NPN	1	EA	MOT	80211	2N5179
R1	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
R2	0072011	RESISTOR 5.6K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G562KS
R3	0071897	RESISTOR 150 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G151KS
R4	0071977	RESISTOR 2.2K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G222KS
R5	0071951	RESISTOR 1.0K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G102KS
R6	0071951	RESISTOR 1.0K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G102KS
R7	0072165	RESISTOR 470K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G474KS
R8	0071879	RESISTOR 82 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G820KS
R9	0072054	RESISTOR 22K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G223KS
R10	0072026	RESISTOR 10K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G103KS
R11	0072026	RESISTOR 10K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G103KS
R12	0071907	RESISTOR 220 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G221KS
R13	0071966	RESISTOR 1.5K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G152KS
R14	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
R15	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
U1	0081795	IC BALANCED MIXER	1	EA	TI	01295	SN76514N
Y1	0082332	CRYSTAL 129.00 MHZ .0025% SERIES RES	1	EA	ERT	00000	HC/18U HOLDER
Y2	0082320	CRYSTAL 11.446 MHZ .0025% SERIES RES	1	EA	ERT	00000	HC/18U HOLDER

PARTS LIST

MODEL 6300PL LOW-BAND ASSEMBLY, CHANNEL 5

COMP DESIG	S-A PART NUMBER	DESCRIPTION	QTY	UM	MFR	FSCM	MFR PART NO.
1	0123401	PC BOARD ASSY 6300PL PHASE LOCK BOARD	1	EA			
2	0125665	PC BOARD ASSY 6300PL LOW BAND CH 5	1	EA			
3	0123464	PANEL FRONT 6300PL	1	EA			
4	0106037	HANDLE FRONT PANEL PLUG-IN	2	EA			
5	0106024	PLATE SLIDE PLUG-IN MODULATOR	1	EA			
6	0106022	PANEL SIDE PLUG-IN	1	EA			
7	0078531	CONN RECT BODY W/O CONTACTS 20 POS RECEP	1	EA	BDW	09922	MS20PM-61
8	0078532	CONN CONTACT MALE COAX CRIMP .1 C CABLE	4	EA	BDW	09922	RCDXK-1
9	0078535	CONN CONTACT FEMALE CRIMP NO. 24 WIRE	4	EA	BDW	09922	RC24M-9
10	0077322	SCREW 4-40 X 1/4 PAN HD,TAPTITE,CAD PLT	4	EA	CS	72228	BY DESCRIPTION
11	0072321	SCREW 4-40 X 3/8 F HD,82 DEG,SST	4	EA	XZ	00000	PER MS51959-15
12	0072310	SCREW 4-40 X 3/16 F HD,82 DEG,SST,UNDRCT	12	EA	XZ	00000	PER MS51959-12
13	0081882	LAMP LED FLV110 RED LENS	1	EA	FMP	00000	FLV110
14	0082315	LAMP LED MOUNTING CLIP FOR FLV117	1	EA	FMP	00000	FLS010
15	0105279	CHASSIS PLUG-IN RF CONNECTOR MODULATOR	1	EA			
16	0072861	SPACER 4-40 ID 3/16 OD 1/2 L NI PLT BRS	4	EA	FS	73734	9174
17	0072319	SCREW 4-40 X 5/16 PAN HD,SST	8	EA	XZ	00000	PER MS51957-14

PARTS LIST

MODEL 6300PL LOW-BAND ASSEMBLY, CHANNEL 6

COMP DESIG	S-A PART NUMBER	DESCRIPTION	QTY	UM	MFR	FSCM	MFR PART NO.
1	0123401	PC BOARD ASSY 6300PL PHASE LOCK BOARD	1	EA			
2	0125666	PC BOARD ASSY 6300PL LOW BAND CH 6	1	EA			
3	0123464	PANEL FRONT 6300PL	1	EA			
4	0106037	HANDLE FRONT PANEL PLUG-IN	2	EA			
5	0106024	PLATE SLIDE PLUG-IN MODULATOR	1	EA			
6	0106022	PANEL SIDE PLUG-IN	1	EA			
7	0078531	CONN RECT BODY W/O CONTACTS 20 POS RECEP	1	EA	BDW	09922	MS20PM-61
8	0078532	CONN CONTACT MALE COAX CRIMP .1 C CABLE	4	EA	BDW	09922	RCDXK-1
9	0078535	CONN CONTACT FEMALE CRIMP NO. 24 WIRE	4	EA	BDW	09922	RC24M-9
10	0077322	SCREW 4-40 X 1/4 PAN HD,TAPTITE,CAD PLT	4	EA	CS	72228	BY DESCRIPTION
11	0072321	SCREW 4-40 X 3/8 F HD,82 DEG,SST	4	EA	XZ	00000	PER MS51959-15
12	0072310	SCREW 4-40 X 3/16 F HD,82 DEG,SST,UNDRCT	12	EA	XZ	00000	PER MS51959-12
13	0081882	LAMP LED FLV110 RED LENS	1	EA	FMP	00000	FLV110
14	0082315	LAMP LED MOUNTING CLIP FOR FLV117	1	EA	FMP	00000	FLS010
15	0105279	CHASSIS PLUG-IN RF CONNECTOR MODULATOR	1	EA			
16	0072861	SPACER 4-40 ID 3/16 OD 1/2 L NI PLT BRS	4	EA	FS	73734	9174
17	0072319	SCREW 4-40 X 5/16 PAN HD,SST	8	EA	XZ	00000	PER MS51957-14

PARTS LIST

MODEL 6300PL HIGH-BAND ASSEMBLY, CHANNEL 7

COMP DESIG	S-A PART NUMBER	DESCRIPTION	QTY	UM	MFR	FSCM	MFR PART NO.
1	0123465	PC BOARD RF	1	EA			
2	0125716	SCHEMATIC RF HIGH BAND 6300PL MODULATOR	1	EA			
C1	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C2	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C3	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C4	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C5	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C6	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C7	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C8	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C9	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C10	0070531	CAPACITR 270 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15FD271J03
C11	0035642	CAPACITR 2-18 PF MIN PC MT	1	EA	AE	73445	HT10KA/218
C12	0081923	CAPACITR 6 PF 500V CER DISC	1	EA	ER	72982	831-C0G0-609C
C13	0080142	CAPACITR 20 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15FD200J
C14	0035641	CAPACITR 2-9 PF MIN PC MT	1	EA	AF	73445	HT10KA/29
C15	0073492	CAPACITR 15 PF 500V SILVER MICA 5%	1	EA	A	00656	ADM15C150J500
C16	0035760	CAPACITR 4 PF 500V CER DISC	1	EA	ER	72982	831-C0H0-409C
C17	0076381	CAPACITR 1.5 PF 500V CER TUBULAR	1	EA	A	00656	CC20CK1R5C
C18	0035642	CAPACITR 2-18 PF MIN PC MT	1	EA	AE	73445	HT10KA/218
C19	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C20	0081536	CAPACITR 5-50 PF MIN PC MT	1	EA	AE	73445	HT10MA/550
C21	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C22	0035642	CAPACITR 2-18 PF MIN PC MT	1	EA	AE	73445	HT10KA/218
C23	0035641	CAPACITR 2-9 PF MIN PC MT	1	EA	AE	73445	HT10KA/29
C24	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C25	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C26	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C27	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C28	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C29	0081746	CAPACITR 1 PF 500V CER DISC	1	EA	ER	72982	831-C0G0-109C
C30	0081536	CAPACITR 5-50 PF MIN PC MT	1	EA	AE	73445	HT10MA/550
C31	0075417	CAPACITR .01 MF 150V CER DISC	1	EA	CRL	71590	DDM-103
C32	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C33	0070470	CAPACITR 10 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15CD100J03
C34	0070519	CAPACITR 120 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15FD121J03
C35	0081536	CAPACITR 5-50 PF MIN PC MT	1	EA	AE	73445	HT10MA/550
C36	0075417	CAPACITR .01 MF 150V CER DISC	1	EA	CRL	71590	DDM-103
C37	0070542	CAPACITR 680 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD19FD681J03
C38	0081923	CAPACITR 6 PF 500V CER DISC	1	EA	ER	72982	831-C0G0-609C
C39	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C40	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C41	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C42	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C43	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C44	0070517	CAPACITR 100 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15FD101J03
C45	0082004	CAPACITR 3.3 PF 100V CER DISC	1	EA	ER	72982	835-024-C0G0-339B
C46	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C47	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
CR1	0082311	DIODE MV3102 VARACTOR SIL RIBBON LEADS	1	EA	MOT	00000	MV3103
CR2	0077811	DIODE 1N4743A SI ZEN 13V 5% 1W	1	EA	MOT	80211	1N4743A
E1	0081766	CORE BEAD FERRITE 14 .138X.037X.150L	1	EA	STK	78488	57-1829
E2	0081766	CORE BEAD FERRITE 14 .138X.037X.150L	1	EA	STK	78488	57-1829
L1	0077484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	1	EA	M	76493	70F156A1
L2	0077484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	1	EA	M	76493	70F156A1
L3	0077484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	1	EA	M	76493	70F156A1
L4	0078200	INDUCTOR .1 UH SUBMIN SHLD ENCAP 10%	1	EA	NYT	72259	WEE-WEE .1
L5	0079113	INDUCTOR .18 UH SUBMIN UNSHLD MOLDED 10%	1	EA	NYT	72259	DD-.18
L6	0078200	INDUCTOR .1 UH SUBMIN SHLD ENCAP 10%	1	EA	NYT	72259	WEE-WEE .1
L7	0081662	INDUCTOR .1 UH SUBMIN UNSHLD 10%	1	EA	DP	91637	IR-2
L8	0079170	INDUCTOR .05 UH SUBMIN UNSHLD MOLDED 10%	1	EA	DP	00000	IM-2
L9	0079317	INDUCTOR 27 UH SUBMIN UNSHLD MOLDED 10%	1	EA	NYT	72259	DD-27
L10	0081745	INDUCTOR .27 UH SUBMIN UNSHLD 10%	1	EA	DP	91637	IR-2
L11	0077484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	1	EA	M	76493	70F156A1
Q1	0035669	TRANSSTR 2N5179 SIL NPN	1	EA	MOT	80211	2N5179
Q2	0082319	TRANSSTR MFE-121 MOSFET DUAL GATE	1	EA	MOT	00000	MFE 121
Q3	0035669	TRANSSTR 2N5179 SIL NPN	1	EA	MOT	80211	2N5179
Q4	0035669	TRANSSTR 2N5179 SIL NPN	1	EA	MOT	80211	2N5179
R1	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
R2	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
R3	0072019	RESISTOR 8.2K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G822KS
R4	0071973	RESISTOR 1.8K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G182KS
R5	0071989	RESISTOR 3.3K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G332KS
R6	0071862	RESISTOR 47 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G470KS
R7	0071931	RESISTOR 560 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G561KS
R8	0071938	RESISTOR 680 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G621KS
R9	0072113	RESISTOR 100K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G104KS
R10	0072088	RESISTOR 56K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G563KS
R11	0072059	RESISTOR 27K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G273KS
R12	0071973	RESISTOR 1.8K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G182KS
R13	0071926	RESISTOR 470 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G471KS
R14	0071982	RESISTOR 2.7K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G272KS
R15	0072026	RESISTOR 10K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G103KS
R16	0072165	RESISTOR 470K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G474KS
R17	0071879	RESISTOR 82 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G820KS
R18	0072054	RESISTOR 22K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G223KS
R19	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
R20	0072026	RESISTOR 10K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G103KS
R21	0072026	RESISTOR 10K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G103KS
R22	0071907	RESISTOR 220 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G221KS
R23	0071966	RESISTOR 1.5K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G152KS
R24	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
U1	0081795	IC BALANCED MIXER	1	EA	TI	01295	SN76514N
Y1	0082323	CRYSTAL 110.50 MHZ .0025% SERIES RES	1	EA	ERT	00000	HC/18U HOLDER
Y2	0082320	CRYSTAL 11.446 MHZ .0025% SERIES RES	1	EA	ERT	00000	HC/18U HOLDER

PARTS LIST

MODEL 6300PL HIGH-BAND ASSEMBLY, CHANNEL 7

COMP DESIG	S-A PART NUMBER	DESCRIPTION	QTY	UM	MFR	FSCM	MFR PART NO.
1	0123401	PC BOARD ASSY 6300PL PHASE LOCK BOARD	1	EA			
2	0125667	PC BOARD ASSY 6300PL HIGH BAND CH 7	1	EA			
3	0123464	PANEL FRONT 6300PL	1	EA			
4	0106037	HANDLE FRONT PANEL PLUG-IN	2	EA			
5	0106024	PLATE SLIDE PLUG-IN MODULATOR	1	EA			
6	0106022	PANEL SIDE PLUG-IN	1	EA			
7	0078531	CONN RECT BODY W/C CONTACTS 20 POS RECEP	1	EA	BDW	09922	MS20PM-61
8	0078532	CONN CONTACT MALE COAX CRIMP .1 D CABLE	4	EA	BDW	09922	RCDXK-1
9	0078535	CONN CONTACT FEMALE CRIMP NO. 24 WIRE	4	EA	BDW	09922	RC24M-9
10	0077322	SCREW 4-40 X 1/4 PAN HD,TAPTITE,CAD PLT	4	EA	CS	72228	BY DESCRIPTION
11	0072321	SCREW 4-40 X 3/8 F HD,82 DEG,SST	4	EA	XZ	00000	PER MS51959-15
12	0072310	SCREW 4-40 X 3/16 F HD,82 DEG,SST,UNDRCT	12	EA	XZ	00000	PER MS51959-12
13	0081882	LAMP LED FLV110 RED LENS	1	EA	FMP	00000	FLV110
14	0082315	LAMP LED MOUNTING CLIP FOR FLV117	1	EA	FMP	00000	FLS010
15	0105279	CHASSIS PLUG-IN RF CONNECTOR MODULATOR	1	EA			
16	0072861	SPACER 4-40 ID 3/16 OD 1/2 L NI PLT BRS	4	EA	FS	73734	9174
17	0072319	SCREW 4-40 X 5/16 PAN HD,SST	8	EA	XZ	00000	PER MS51957-14

PARTS LIST

MODEL 6300PL HIGH-BAND ASSEMBLY, CHANNEL 8

COMP DESIG	S-A PART NUMBER	DESCRIPTION	QTY	UM	MFR	FSCM	MFR PART NO.
1	0123465	PC BOARD RF	1	EA			
2	0125716	SCHEMATIC RF HIGH BAND 6300PL MODULATOR		EA			
C1	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C2	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C3	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C4	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C5	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C6	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C7	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C8	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C9	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C10	0070531	CAPACITR 270 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15FD271J03
C11	0035642	CAPACITR 2-18 PF MIN PC MT	1	EA	AE	73445	HT10KA/218
C12	0081923	CAPACITR 6 PF 500V CER DISC	1	EA	ER	72982	831-C0G0-609C
C13	0080142	CAPACITR 20 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15ED200J
C14	0035641	CAPACITR 2-9 PF MIN PC MT	1	EA	AE	73445	HT10KA/29
C15	0073492	CAPACITR 15 PF 500V SILVER MICA 5%	1	EA	A	00656	ADM15C150J500
C16	0035760	CAPACITR 4 PF 500V CER DISC	1	EA	ER	72982	831-C0H0-409C
C17	0076381	CAPACITR 1.5 PF 500V CER TUBULAR	1	EA	A	00656	CC20CK1R5C
C18	0035642	CAPACITR 2-18 PF MIN PC MT	1	EA	AE	73445	HT10KA/218
C19	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C20	0081536	CAPACITR 5-50 PF MIN PC MT	1	EA	AE	73445	HT10MA/550
C21	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C22	0035642	CAPACITR 2-18 PF MIN PC MT	1	EA	AE	73445	HT10KA/218
C23	0035641	CAPACITR 2-9 PF MIN PC MT	1	EA	AE	73445	HT10KA/29
C24	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C25	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C26	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C27	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C28	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C29	0081746	CAPACITR 1 PF 500V CER DISC	1	EA	ER	72982	831-C0G0-109C
C30	0081536	CAPACITR 5-50 PF MIN PC MT	1	EA	AE	73445	HT10MA/550
C31	0075417	CAPACITR .01 MF 150V CER DISC	1	EA	CRL	71590	DDM-103
C32	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C33	0070470	CAPACITR 10 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15CD100J03
C34	0070519	CAPACITR 120 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15FD121J03
C35	0081536	CAPACITR 5-50 PF MIN PC MT	1	EA	AE	73445	HT10MA/550
C36	0075417	CAPACITR .01 MF 150V CER DISC	1	EA	CRL	71590	DDM-103
C37	0070542	CAPACITR 680 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD19FD681J03
C38	0081923	CAPACITR 6 PF 500V CER DISC	1	EA	ER	72982	831-C0G0-609C
C39	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C40	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C41	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C42	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C43	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C44	0070517	CAPACITR 100 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15FD101J03
C45	0082004	CAPACITR 3.3 PF 100V CER DISC	1	EA	ER	72982	835-024-C0G0-339B
C46	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C47	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
CR1	0082311	DIODE MV3102 VARACTOR SIL RIBBON LEADS	1	EA	MOT	00000	MV3103
CR2	0077811	DIODE 1N4743A SI ZEN 13V 5% 1W	1	EA	MOT	80211	1N4743A
E1	0081766	CORE BEAD FERRITE 14 .138X.037X.150L	1	EA	STK	78488	57-1829
E2	0081766	CORE BEAD FERRITE 14 .138X.037X.150L	1	EA	STK	78488	57-1829
L1	0077484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	1	EA	M	76493	70F156A1
L2	0077484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	1	EA	M	76493	70F156A1
L3	0077484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	1	EA	M	76493	70F156A1
L4	0078200	INDUCTOR .1 UH SUBMIN SHLD ENCAP 10%	1	EA	NYT	72259	WEE-WEE .1
L5	0079113	INDUCTOR .18 UH SUBMIN UNSHLD MOLDED 10%	1	EA	NYT	72259	DD-.18
L6	0078200	INDUCTOR .1 UH SUBMIN SHLD ENCAP 10%	1	EA	NYT	72259	WEE-WEE .1
L7	0081662	INDUCTOR .1 UH SUBMIN UNSHLD 10%	1	EA	DP	91637	IR-2
L8	0079170	INDUCTOR .05 UH SUBMIN UNSHLD MOLDED 10%	1	EA	DP	00000	IM-2
L9	0079317	INDUCTOR 27 UH SUBMIN UNSHLD MOLDED 10%	1	EA	NYT	72259	DD-27
L10	0081745	INDUCTOR .27 UH SUBMIN UNSHLD 10%	1	EA	DP	91637	IR-2
L11	0077484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	1	EA	M	76493	70F156A1
Q1	0035669	TRANSSTR 2N5179 SIL NPN	1	EA	MOT	80211	2N5179
Q2	0082319	TRANSSTR MFE-121 MOSFET DUAL GATE	1	EA	MOT	00000	MFE 121
Q3	0035669	TRANSSTR 2N5179 SIL NPN	1	EA	MOT	80211	2N5179
Q4	0035669	TRANSSTR 2N5179 SIL NPN	1	EA	MOT	80211	2N5179
R1	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
R2	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
R3	0072019	RESISTOR 8.2K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G822KS
R4	0071973	RESISTOR 1.8K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G182KS
R5	0071989	RESISTOR 3.3K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G332KS
R6	0071862	RESISTOR 47 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G470KS
R7	0071931	RESISTOR 560 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G561KS
R8	0071938	RESISTOR 680 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G681KS
R9	0072113	RESISTOR 100K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G104KS
R10	0072088	RESISTOR 56K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G563KS
R11	0072059	RESISTOR 27K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G273KS
R12	0071973	RESISTOR 1.8K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G182KS
R13	0071926	RESISTOR 470 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G471KS
R14	0071982	RESISTOR 2.7K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G272KS
R15	0072026	RESISTOR 10K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G103KS
R16	0072165	RESISTOR 470K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G474KS
R17	0071879	RESISTOR 82 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G820KS
R18	0072054	RESISTOR 22K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G223KS
R19	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
R20	0072026	RESISTOR 10K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G103KS
R21	0072026	RESISTOR 10K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G103KS
R22	0071907	RESISTOR 220 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G221KS
R23	C071966	RESISTOR 1.5K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G152KS
R24	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
U1	0081795	IC BALANCED MIXER	1	EA	TI	01295	SN76514N
Y1	0082325	CRYSTAL 113.50 MHZ .0025% SERIES RES	1	EA	ERT	00000	HC/18U HOLDER
Y2	0082320	CRYSTAL 11.446 MHZ .0025% SERIES RES	1	EA	ERT	00000	HC/18U HOLDER

PARTS LIST

MODEL 6300PL HIGH-BAND ASSEMBLY, CHANNEL 8

COMP DESIG	S-A PART NUMBER	DESCRIPTION	QTY	UM	MFR	FSCM	MFR PART NO.
1	0123401	PC BOARD ASSY 6300PL PHASE LOCK BOARD	1	EA			
2	0125668	PC BOARD ASSY 6300PL HIGH BAND CH 8	1	EA			
3	0123464	PANEL FRONT 6300PL	1	EA			
4	0106037	HANDLE FRONT PANEL PLUG-IN	2	EA			
5	0106024	PLATE SLIDE PLUG-IN MODULATOR	1	EA			
6	0106022	PANEL SIDE PLUG-IN	1	EA			
7	0078531	CONN RECT BODY W/C CONTACTS 20 POS RECEP	1	EA	BDW	09922	MS20PM-61
8	0078532	CONN CONTACT MALE COAX CRIMP .1 D CABLE	4	EA	BDW	09922	RCDXK-1
9	0078535	CONN CONTACT FEMALE CRIMP NO. 24 WIRE	4	EA	BDW	09922	RC24M-9
10	0077322	SCREW 4-40 X 1/4 PAN HD,TAPTITE,CAD PLT	4	EA	CS	72228	BY DESCRIPTION
11	0072321	SCREW 4-40 X 3/8 F HD,82 DEG,SST	4	EA	XZ	00000	PER MS51959-15
12	0072310	SCREW 4-40 X 3/16 F HD,82 DEG,SST,UNDRCT	12	EA	XZ	00000	PER MS51959-12
13	0081882	LAMP LED FLV110 RED LENS	1	EA	FMP	00000	FLV110
14	0082315	LAMP LED MOUNTING CLIP FOR FLV117	1	EA	FMP	00000	FLS010
15	0105279	CHASSIS PLUG-IN RF CONNECTOR MODULATOR	1	EA			
16	0072861	SPACER 4-40 ID 3/16 OD 1/2 L NI PLT BRS	4	EA	FS	73734	9174
17	0072319	SCREW 4-40 X 5/16 PAN HD,SST	8	EA	XZ	00000	PER MS51957-14

PARTS LIST

MODEL 6300PL HIGH-BAND ASSEMBLY, CHANNEL 9

COMP DESIG	S-A PART NUMBER	DESCRIPTION	QTY	UM	MFR	FSCM	MFR PART NO.
1	0123465	PC BOARD RF	1	EA			
2	0125716	SCHEMATIC RF HIGH BAND 6300PL MODULATOR		EA			
C1	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C2	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C3	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C4	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C5	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C6	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C7	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C8	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C9	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C10	0070531	CAPACITR 270 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15FD271J03
C11	0035642	CAPACITR 2-18 PF MIN PC MT	1	EA	AE	73445	HT10KA/218
C12	0081923	CAPACITR 6 PF 500V CER DISC	1	EA	ER	72982	831-C0G0-609C
C13	0080142	CAPACITR 20 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15ED200J
C14	0035641	CAPACITR 2-9 PF MIN PC MT	1	EA	AE	73445	HT10KA/29
C15	0073492	CAPACITR 15 PF 500V SILVER MICA 5%	1	EA	A	00656	ADM15C150J500
C16	0035760	CAPACITR 4 PF 500V CER DISC	1	EA	ER	72982	831-C0H0-409C
C17	0076381	CAPACITR 1.5 PF 500V CER TUBULAR	1	EA	A	00656	CC20CK1R5C
C18	0035642	CAPACITR 2-18 PF MIN PC MT	1	EA	AE	73445	HT10KA/218
C19	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C20	0081536	CAPACITR 5-50 PF MIN PC MT	1	EA	AE	73445	HT10MA/550
C21	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C22	0035642	CAPACITR 2-18 PF MIN PC MT	1	EA	AE	73445	HT10KA/218
C23	0035641	CAPACITR 2-9 PF MIN PC MT	1	EA	AE	73445	HT10KA/29
C24	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C25	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C26	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C27	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C28	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C29	0081746	CAPACITR 1 PF 500V CER DISC	1	EA	ER	72982	831-C0G0-109C
C30	0081536	CAPACITR 5-50 PF MIN PC MT	1	EA	AE	73445	HT10MA/550
C31	0075417	CAPACITR .01 MF 150V CER DISC	1	EA	CRL	71590	DDM-103
C32	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C33	0070470	CAPACITR 10 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15CD100J03
C34	0070519	CAPACITR 120 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD19FD121J03
C35	0081536	CAPACITR 5-50 PF MIN PC MT	1	EA	AE	73445	HT10MA/550
C36	0075417	CAPACITR .01 MF 150V CER DISC	1	EA	CRL	71590	DDM-103
C37	0070542	CAPACITR 680 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD19FD681J03
C38	0081923	CAPACITR 6 PF 500V CER DISC	1	EA	ER	72982	831-C0G0-609C
C39	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C40	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C41	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C42	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C43	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C44	0070517	CAPACITR 100 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15FD101J03
C45	0082004	CAPACITR 3.3 PF 100V CER DISC	1	EA	ER	72982	835-024-C0G0-339B
C46	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C47	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
CR1	0082311	DIODE MV3102 VARACTOR SIL RIBBON LEADS	1	EA	MOT	00000	MV3103
CR2	0077811	DIODE 1N4743A SI ZEN 13V 5% 1W	1	EA	MOT	80211	1N4743A
E1	0081766	CORE BEAD FERRITE 14 .138X.037X.150L	1	EA	STK	78488	57-1829
E2	0081766	CORE BEAD FERRITE 14 .138X.037X.150L	1	EA	STK	78488	57-1829
L1	0077484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	1	EA	M	76493	70F156A1
L2	0077484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	1	EA	M	76493	70F156A1
L3	0077484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	1	EA	M	76493	70F156A1
L4	0078200	INDUCTOR .1 UH SUBMIN SHLD ENCAP 10%	1	EA	NYT	72259	WEE-WEE .1
L5	0079113	INDUCTOR .18 UH SUBMIN UNSHLD MOLDED 10%	1	EA	NYT	72259	DD-.18
L6	0078200	INDUCTOR .1 UH SUBMIN SHLD ENCAP 10%	1	EA	NYT	72259	WEE-WEE .1
L7	0081662	INDUCTOR .1 UH SUBMIN UNSHLD 10%	1	EA	DP	91637	IR-2
L8	0079170	INDUCTOR .05 UH SUBMIN UNSHLD MOLDED 10%	1	EA	DP	00000	IM-2
L9	0079317	INDUCTOR 27 UH SUBMIN UNSHLD MOLDED 10%	1	EA	NYT	72259	DD-27
L10	0081745	INDUCTOR .27 UH SUBMIN UNSHLD 10%	1	EA	DP	91637	IR-2
L11	0077484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	1	EA	M	76493	70F156A1
Q1	0035669	TRANSSTR 2N5179 SIL NPN	1	EA	MOT	80211	2N5179
Q2	0082319	TRANSSTR MFE-121 MOSFET DUAL GATE	1	EA	MOT	00000	MFE 121
Q3	0035669	TRANSSTR 2N5179 SIL NPN	1	EA	MOT	80211	2N5179
Q4	0035669	TRANSSTR 2N5179 SIL NPN	1	EA	MOT	80211	2N5179
R1	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
R2	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
R3	0072019	RESISTOR 8.2K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G822KS
R4	0071973	RESISTOR 1.8K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G182KS
R5	0071989	RESISTOR 3.3K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G332KS
R6	0071862	RESISTOR 47 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G470KS
R7	0071931	RESISTOR 560 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G561KS
R8	0071938	RESISTOR 680 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G621KS
R9	0072113	RESISTOR 100K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G104KS
R10	0072088	RESISTOR 56K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G563KS
R11	0072059	RESISTOR 27K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G273KS
R12	0071973	RESISTOR 1.8K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G182KS
R13	0071926	RESISTOR 470 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G471KS
R14	0071982	RESISTOR 2.7K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G272KS
R15	0072026	RESISTOR 10K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G103KS
R16	0072165	RESISTOR 470K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G474KS
R17	0071879	RESISTOR 82 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G820KS
R18	0072054	RESISTOR 22K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G223KS
R19	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
R20	0072026	RESISTOR 10K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G103KS
R21	0072026	RESISTOR 10K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G103KS
R22	0071907	RESISTOR 220 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G221KS
R23	0071966	RESISTOR 1.5K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G152KS
R24	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
U1	0081795	IC BALANCED MIXER	1	EA	TI	01295	SN76514N
Y1	0082326	CRYSTAL 116.50 MHZ .0025% SERIES RES	1	EA	ERT	00000	HC/18U HOLDER
Y2	0082320	CRYSTAL 11.446 MHZ .0025% SERIES RES	1	EA	ERT	00000	HC/18U HOLDER

PARTS LIST

MODEL 6300PL HIGH-BAND ASSEMBLY, CHANNEL 9

COMP DESIG	S-A PART NUMBER	DESCRIPTION	QTY	UM	MFR	FSCM	MFR PART NO.
1	0123401	PC BOARD ASSY 6300PL PHASE LOCK BOARD	1	EA			
2	0125669	PC BOARD ASSY 6300PL HIGH BAND CH 9	1	EA			
3	0123464	PANEL FRONT 6300PL	1	EA			
4	0106037	HANDLE FRONT PANEL PLUG-IN	2	EA			
5	0106024	PLATE SLIDE PLUG-IN MODULATOR	1	EA			
6	0106022	PANEL SIDE PLUG-IN	1	EA			
7	0078531	CONN RECT BODY W/O CONTACTS 20 POS RECEP	1	EA	BDW	09922	MS20PM-61
8	0078532	CONN CONTACT MALE COAX CRIMP .1 D CABLE	4	EA	BDW	09922	RCDXK-1
9	0078535	CONN CONTACT FEMALE CRIMP NO. 24 WIRE	4	EA	BDW	09922	RC24M-9
10	0077322	SCREW 4-40 X 1/4 PAN HD,TAPTITE,CAD PLT	4	EA	CS	72228	BY DESCRIPTION
11	0072321	SCREW 4-40 X 3/8 F HD,82 DEG,SST	4	EA	XZ	00000	PER MS51959-15
12	0072310	SCREW 4-40 X 3/16 F HD,82 DEG,SST,UNDRCT	12	EA	XZ	00000	PER MS51959-12
13	0081882	LAMP LED FLV110 RED LENS	1	EA	FMP	00000	FLV110
14	0082315	LAMP LED MOUNTING CLIP FOR FLV117	1	EA	FMP	00000	FLS010
15	0105279	CHASSIS PLUG-IN RF CONNECTOR MODULATOR	1	EA			
16	0072861	SPACER 4-40 ID 3/16 OD 1/2 L NI PLT BRS	4	EA	FS	73734	9174
17	0072319	SCREW 4-40 X 5/16 PAN HD,SST	8	EA	XZ	00000	PER MS51957-14

PARTS LIST

MODEL 6300PL HIGH-BAND ASSEMBLY, CHANNEL 10

COMP DESIG	S-A PART NUMBER	DESCRIPTION	QTY	UM	MFR	FSCM	MFR PART NO.
1	0123465	PC BOARD RF	1	EA			
2	0125716	SCHEMATIC RF HIGH BAND 6300PL MODULATOR		EA			
C1	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C2	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C3	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C4	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C5	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C6	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C7	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C8	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C9	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C10	0070531	CAPACITR 270 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15FD271J03
C11	0035642	CAPACITR 2-18 PF MIN PC MT	1	EA	AE	73445	HT10KA/218
C12	0081923	CAPACITR 6 PF 500V CER DISC	1	EA	ER	72982	831-C0G0-609C
C13	0080142	CAPACITR 20 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15ED200J
C14	0035641	CAPACITR 2-9 PF MIN PC MT	1	EA	AE	73445	HT10KA/29
C15	0073492	CAPACITR 15 PF 500V SILVER MICA 5%	1	EA	A	00656	ADM15C150J500
C16	0035760	CAPACITR 4 PF 500V CER DISC	1	EA	ER	72982	831-C0H0-409C
C17	0076381	CAPACITR 1.5 PF 500V CER TUBULAR	1	EA	A	00656	CC20CK1R5C
C18	0035642	CAPACITR 2-18 PF MIN PC MT	1	EA	AE	73445	HT10KA/218
C19	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C20	0081536	CAPACITR 5-50 PF MIN PC MT	1	EA	AE	73445	HT10MA/550
C21	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C22	0035642	CAPACITR 2-18 PF MIN PC MT	1	EA	AE	73445	HT10KA/218
C23	0035641	CAPACITR 2-9 PF MIN PC MT	1	EA	AE	73445	HT10KA/29
C24	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C25	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C26	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C27	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C28	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C29	0081746	CAPACITR 1 PF 500V CER DISC	1	EA	ER	72982	831-C0G0-109C
C30	0081536	CAPACITR 5-50 PF MIN PC MT	1	EA	AE	73445	HT10MA/550
C31	0075417	CAPACITR .01 MF 150V CER DISC	1	EA	CRL	71590	DDM-103
C32	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C33	0070470	CAPACITR 10 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15CD100J03
C34	0070519	CAPACITR 120 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15FD121J03
C35	0081536	CAPACITR 5-50 PF MIN PC MT	1	EA	AE	73445	HT10MA/550
C36	0075417	CAPACITR .01 MF 150V CER DISC	1	EA	CRL	71590	DDM-103
C37	0070542	CAPACITR 680 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD19FD681J03
C38	0081923	CAPACITR 6 PF 500V CER DISC	1	EA	ER	72982	831-C0G0-609C
C39	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C40	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C41	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C42	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C43	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C44	0070517	CAPACITR 100 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15FD101J03
C45	0082004	CAPACITR 3.3 PF 100V CER DISC	1	EA	ER	72982	835-024-C0G0-339B
C46	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C47	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
CR1	0082311	DIODE MV3102 VARACTOR SIL RIBBON LEADS	1	EA	MOT	00000	MV3103
CR2	0077811	DIODE 1N4743A SI ZEN 13V 5% 1W	1	EA	MOT	80211	1N4743A
E1	0081766	CORE BEAD FERRITE 14 .138X.037X.150L	1	EA	STK	78488	57-1829
E2	0081766	CORE BEAD FERRITE 14 .138X.037X.150L	1	EA	STK	78488	57-1829
L1	0077484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	1	EA	M	76493	70F156A1
L2	0077484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	1	EA	M	76493	70F156A1
L3	0077484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	1	EA	M	76493	70F156A1
L4	0078200	INDUCTOR .1 UH SUBMIN SHLD ENCAP 10%	1	EA	NYT	72259	WEE-WEE .1
L5	0079113	INDUCTOR .18 UH SUBMIN UNSHLD MOLDED 10%	1	EA	NYT	72259	DD-.18
L6	0078200	INDUCTOR .1 UH SUBMIN SHLD ENCAP 10%	1	EA	NYT	72259	WEE-WEE .1
L7	0081662	INDUCTOR .1 UH SUBMIN UNSHLD 10%	1	EA	DP	91637	IR-2
L8	0079170	INDUCTOR .05 UH SUBMIN UNSHLD MOLDED 10%	1	EA	DP	00000	IM-2
L9	0079317	INDUCTOR 27 UH SUBMIN UNSHLD MOLDED 10%	1	EA	NYT	72259	DD-27
L10	0081745	INDUCTOR .27 UH SUBMIN UNSHLD 10%	1	EA	DP	91637	IR-2
L11	0077484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	1	EA	M	76493	70F156A1
Q1	0035669	TRANSSTR 2N5179 SIL NPN	1	EA	MOT	80211	2N5179
Q2	0082319	TRANSSTR MFE-121 MOSFET DUAL GATE	1	EA	MOT	00000	MFE 121
Q3	0035669	TRANSSTR 2N5179 SIL NPN	1	EA	MOT	80211	2N5179
Q4	0035669	TRANSSTR 2N5179 SIL NPN	1	EA	MOT	80211	2N5179
R1	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
R2	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
R3	0072019	RESISTOR 8.2K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G822KS
R4	0071973	RESISTOR 1.8K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G182KS
R5	0071989	RESISTOR 3.3K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G332KS
R6	0071862	RESISTOR 47 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G470KS
R7	0071931	RESISTOR 560 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G561KS
R8	0071938	RESISTOR 680 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G621KS
R9	0072113	RESISTOR 100K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G104KS
R10	0072088	RESISTOR 56K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G563KS
R11	0072059	RESISTOR 27K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G273KS
R12	0071973	RESISTOR 1.8K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G182KS
R13	0071926	RESISTOR 470 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G471KS
R14	0071982	RESISTOR 2.7K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G272KS
R15	0072026	RESISTOR 10K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G103KS
R16	0072165	RESISTOR 470K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G474KS
R17	0071879	RESISTOR 82 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G820KS
R18	0072054	RESISTOR 22K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G223KS
R19	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
R20	0072026	RESISTOR 10K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G103KS
R21	0072026	RESISTOR 10K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G103KS
R22	0071907	RESISTOR 220 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G221KS
R23	0071966	RESISTOR 1.5K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G152KS
R24	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
U1	0081795	IC BALANCED MIXER	1	EA	TI	01295	SN76514N
Y1	0082327	CRYSTAL 119.50 MHZ .0025% SERIES RES	1	EA	ERT	00000	HC/18U HOLDER
Y2	0082320	CRYSTAL 11.446 MHZ .0025% SERIES RES	1	EA	ERT	00000	HC/18U HOLDER

PARTS LIST

MODEL 6300PL HIGH-BAND ASSEMBLY, CHANNEL 10

COMP DESIG	S-A PART NUMBER	DESCRIPTION	QTY	UM	MFR	FSCM	MFR PART NO.
1	0123401	PC BOARD ASSY 6300PL PHASE LOCK BOARD	1	EA			
2	0125670	PC BOARD ASSY 6300PL HIGH BAND CH 10	1	EA			
3	0123464	PANEL FRONT 6300PL	1	EA			
4	0106037	HANDLE FRONT PANEL PLUG-IN	2	EA			
5	0106024	PLATE SLIDE PLUG-IN MODULATOR	1	EA			
6	0106022	PANEL SIDE PLUG-IN	1	EA			
7	0078531	CONN RECT BODY W/C CONTACTS 20 POS RECEP	1	EA	BDW	09922	MS20PM-61
8	0078532	CONN CONTACT MALE COAX CRIMP .1 D CABLE	4	EA	BDW	09922	RCDXK-1
9	0078535	CONN CONTACT FEMALE CRIMP NO. 24 WIRE	4	EA	BDW	09922	RC24M-9
10	0077322	SCREW 4-40 X 1/4 PAN HD,TAPTITE,CAD PLT	4	EA	CS	72228	BY DESCRIPTION
11	0072321	SCREW 4-40 X 3/8 F HD,82 DEG,SST	4	EA	XZ	00000	PER MS51959-15
12	0072310	SCREW 4-40 X 3/16 F HD,82 DEG,SST,UNDRCT	12	EA	XZ	00000	PER MS51959-12
13	0081882	LAMP LED FLV110 RED LENS	1	EA	FMP	00000	FLV110
14	0082315	LAMP LED MOUNTING CLIP FOR FLV117	1	EA	FMP	00000	FLS010
15	0105279	CHASSIS PLUG-IN RF CONNECTOR MODULATOR	1	EA			
16	0072861	SPACER 4-40 ID 3/16 OD 1/2 L NI PLT BRS	4	EA	FS	73734	9174
17	0072319	SCREW 4-40 X 5/16 PAN HD,SST	8	EA	XZ	00000	PER MS51957-14

PARTS LIST

MODEL 6300PL HIGH-BAND ASSEMBLY, CHANNEL 11

COMP DESIG	S-A PART NUMBER	DESCRIPTION	QTY	UM	MFR	FSCM	MFR PART NO.
1	0123465	PC BOARD RF	1	EA			
2	0125716	SCHEMATIC RF HIGH BAND 6300PL MODULATOR		EA			
C1	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C2	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C3	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C4	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C5	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C6	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C7	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C8	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C9	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C10	0070531	CAPACITR 270 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15FD271J03
C11	0035642	CAPACITR 2-18 PF MIN PC MT	1	EA	AE	73445	HT10KA/218
C12	0081923	CAPACITR 6 PF 500V CER DISC	1	EA	ER	72982	831-COGO-609C
C13	0080142	CAPACITR 20 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15ED200J
C14	0035641	CAPACITR 2-9 PF MIN PC MT	1	EA	AE	73445	HT10KA/29
C15	0073492	CAPACITR 15 PF 500V SILVER MICA 5%	1	EA	A	00656	ADM15C150J500
C16	0035760	CAPACITR 4 PF 500V CER DISC	1	EA	ER	72982	831-COHO-409C
C17	0076381	CAPACITR 1.5 PF 500V CER TUBULAR	1	EA	A	00656	CC20CK1R5C
C18	0035642	CAPACITR 2-18 PF MIN PC MT	1	EA	AE	73445	HT10KA/218
C19	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C20	0081536	CAPACITR 5-50 PF MIN PC MT	1	EA	AE	73445	HT10MA/550
C21	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C22	0035642	CAPACITR 2-18 PF MIN PC MT	1	EA	AE	73445	HT10KA/218
C23	0035641	CAPACITR 2-9 PF MIN PC MT	1	EA	AE	73445	HT10KA/29
C24	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C25	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C26	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C27	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C28	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C29	0081746	CAPACITR 1 PF 500V CER DISC	1	EA	ER	72982	831-COGO-109C
C30	0081536	CAPACITR 5-50 PF MIN PC MT	1	EA	AE	73445	HT10MA/550
C31	0075417	CAPACITR .01 MF 150V CER DISC	1	EA	CRL	71590	DDM-103
C32	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C33	0070470	CAPACITR 10 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15CD100J03
C34	0070519	CAPACITR 120 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15FD121J03
C35	0081536	CAPACITR 5-50 PF MIN PC MT	1	EA	AE	73445	HT10MA/550
C36	0075417	CAPACITR .01 MF 150V CER DISC	1	EA	CRL	71590	DDM-103
C37	0070542	CAPACITR 680 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD19FD681J03
C38	0081923	CAPACITR 6 PF 500V CER DISC	1	EA	ER	72982	831-COGO-609C
C39	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C40	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C41	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C42	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C43	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C44	0070517	CAPACITR 100 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15FD101J03
C45	0082004	CAPACITR 3.3 PF 100V CER DISC	1	EA	ER	72982	835-024-COGO-339B
C46	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C47	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
CR1	0082311	DIODE MV3102 VARACTOR SIL RIBBON LEADS	1	EA	MOT	00000	MV3103
CR2	0077811	DIODE 1N4743A SI ZEN 13V 5% 1W	1	EA	MOT	80211	1N4743A
E1	0081766	CORE BEAD FERRITE 14 .138X.037X.150L	1	EA	STK	78488	57-1829
E2	0081766	CORE BEAD FERRITE 14 .138X.037X.150L	1	EA	STK	78488	57-1829
L1	0077484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	1	EA	M	76493	70F156A1
L2	0077484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	1	EA	M	76493	70F156A1
L3	0077484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	1	EA	M	76493	70F156A1
L4	0078200	INDUCTOR .1 UH SUBMIN SHLD ENCAP 10%	1	EA	NYT	72259	WEE-WEE .1
L5	0079113	INDUCTOR .18 UH SUBMIN UNSHLD MOLDED 10%	1	EA	NYT	72259	DD-.18
L6	0078200	INDUCTOR .1 UH SUBMIN SHLD ENCAP 10%	1	EA	NYT	72259	WEE-WEE .1
L7	0081662	INDUCTOR .1 UH SUBMIN UNSHLD 10%	1	EA	DP	91637	IR-2
L8	0079170	INDUCTOR .05 UH SUBMIN UNSHLD MOLDED 10%	1	EA	DP	00000	IM-2
L9	0079317	INDUCTOR 27 UH SUBMIN UNSHLD MOLDED 10%	1	EA	NYT	72259	DD-27
L10	0081745	INDUCTOR .27 UH SUBMIN UNSHLD 10%	1	EA	DP	91637	IR-2
L11	0077484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	1	EA	M	76493	70F156A1
Q1	0035669	TRANSSTR 2N5179 SIL NPN	1	EA	MOT	80211	2N5179
Q2	0082319	TRANSSTR MFE-121 MOSFET DUAL GATE	1	EA	MOT	00000	MFE 121
Q3	0035669	TRANSSTR 2N5179 SIL NPN	1	EA	MOT	80211	2N5179
Q4	0035669	TRANSSTR 2N5179 SIL NPN	1	EA	MOT	80211	2N5179
R1	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
R2	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
R3	0072019	RESISTOR 8.2K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G822KS
R4	0071973	RESISTOR 1.8K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G182KS
R5	0071989	RESISTOR 3.3K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G332KS
R6	0071862	RESISTOR 47 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G470KS
R7	0071931	RESISTOR 560 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G561KS
R8	0071938	RESISTOR 680 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G621KS
R9	0072113	RESISTOR 100K OHM 1/4W 10% COMP	1	EA	AB	01121	RCRC7G104KS
R10	0072088	RESISTOR 56K OHM 1/4W 10% COMP	1	EA	AB	01121	RCRC7G563KS
R11	0072059	RESISTOR 27K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G273KS
R12	0071973	RESISTOR 1.8K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G182KS
R13	0071926	RESISTOR 470 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G471KS
R14	0071982	RESISTOR 2.7K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G272KS
R15	0072026	RESISTOR 10K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G103KS
R16	0072165	RESISTOR 470K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G474KS
R17	0071879	RESISTOR 82 OHM 1/4W 10% COMP	1	EA	AB	01121	RCRC7G820KS
R18	0072054	RESISTOR 22K OHM 1/4W 10% COMP	1	EA	AB	01121	RCRC7G223KS
R19	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
R20	0072026	RESISTOR 10K OHM 1/4W 10% COMP	1	EA	AB	01121	RCRC7G103KS
R21	0072026	RESISTOR 10K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G103KS
R22	0071907	RESISTOR 220 OHM 1/4W 10% COMP	1	EA	AB	01121	RCRC7G221KS
R23	0071966	RESISTOR 1.5K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G152KS
R24	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
U1	0081795	IC BALANCED MIXER	1	EA	TI	01295	SN76514N
Y1	0082328	CRYSTAL 122.50 MHZ .0025% SERIES RES	1	EA	ERT	00000	HC/18U HOLDER
Y2	0082320	CRYSTAL 11.446 MHZ .0025% SERIES RES	1	EA	ERT	00000	HC/18U HOLDER

PARTS LIST

MODEL 6300PL HIGH-BAND ASSEMBLY, CHANNEL 11

COMP DESIG	S-A PART NUMBER	DESCRIPTION	QTY	UM	MFR	FSCM	MFR PART NO.
1	0123401	PC BOARD ASSY 6300PL PHASE LOCK BOARD	1	EA			
2	0125671	PC BOARD ASSY 6300PL HIGH BAND CH 11	1	EA			
3	0123464	PANEL FRONT 6300PL	1	EA			
4	0106037	HANDLE FRONT PANEL PLUG-IN	2	EA			
5	0106024	PLATE SLIDE PLUG-IN MODULATOR	1	EA			
6	0106022	PANEL SIDE PLUG-IN	1	EA			
7	0078531	CONN RECT BODY W/O CONTACTS 20 POS RECEP	1	EA	BDW	09922	MS20PM-61
8	0078532	CONN CONTACT MALE COAX CRIMP .1 D CABLE	4	EA	BDW	09922	RCDXK-1
9	0078535	CONN CONTACT FEMALE CRIMP NO. 24 WIRE	4	EA	BDW	09922	RC24M-9
10	0077322	SCREW 4-40 X 1/4 PAN HD,TAPTITE,CAD PLT	4	EA	CS	72228	BY DESCRIPTION
11	0072321	SCREW 4-40 X 3/8 F HD,82 DEG,SST	4	EA	XZ	00000	PER MS51959-15
12	0072310	SCREW 4-40 X 3/16 F HD,82 DEG,SST,UNDRCT	12	EA	XZ	00000	PER MS51959-12
13	0081882	LAMP LED FLV110 RED LENS	1	EA	FMP	00000	FLV110
14	0082315	LAMP LED MOUNTING CLIP FOR FLV117	1	EA	FMP	00000	FLS010
15	0105279	CHASSIS PLUG-IN RF CONNECTOR MODULATOR	1	EA			
16	0072861	SPACER 4-40 ID 3/16 OD 1/2 L NI PLT BRS	4	EA	FS	73734	9174
17	0072319	SCREW 4-40 X 5/16 PAN HD,SST	8	EA	XZ	00000	PER MS51957-14

PARTS LIST

MODEL 6300PL HIGH-BAND ASSEMBLY, CHANNEL 12

COMP DESIG	S-A PART NUMBER	DESCRIPTION	QTY	UM	MFR	FSCM	MFR PART NO.
1	0123465	PC BOARD RF	1	EA			
2	0125716	SCHEMATIC RF HIGH BAND 6300PL MODULATOR		EA			
C1	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C2	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C3	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C4	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C5	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C6	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C7	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C8	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C9	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C10	0070531	CAPACITR 270 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15FD271J03
C11	0035642	CAPACITR 2-18 PF MIN PC MT	1	EA	AE	73445	HT10KA/218
C12	0081923	CAPACITR 6 PF 500V CER DISC	1	EA	ER	72982	831-C0G0-609C
C13	0080142	CAPACITR 20 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15ED200J
C14	0035641	CAPACITR 2-9 PF MIN PC MT	1	EA	AE	73445	HT10KA/29
C15	0073492	CAPACITR 15 PF 500V SILVER MICA 5%	1	EA	A	00656	ADM15C150J500
C16	0035760	CAPACITR 4 PF 500V CER DISC	1	EA	ER	72982	831-C0H0-409C
C17	0076381	CAPACITR 1.5 PF 500V CER TUBULAR	1	EA	A	00656	CC20CK1R5C
C18	0035642	CAPACITR 2-18 PF MIN PC MT	1	EA	AE	73445	HT10KA/218
C19	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C20	0081536	CAPACITR 5-50 PF MIN PC MT	1	EA	AE	73445	HT10MA/550
C21	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C22	0035642	CAPACITR 2-18 PF MIN PC MT	1	EA	AE	73445	HT10KA/218
C23	0035641	CAPACITR 2-9 PF MIN PC MT	1	EA	AE	73445	HT10KA/29
C24	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C25	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C26	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C27	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C28	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C29	0081746	CAPACITR 1 PF 500V CER DISC	1	EA	ER	72982	831-C0G0-109C
C30	0081536	CAPACITR 5-50 PF MIN PC MT	1	EA	AE	73445	HT10MA/550
C31	0075417	CAPACITR .01 MF 150V CER DISC	1	EA	CRL	71590	DDM-103
C32	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C33	0070470	CAPACITR 10 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15CD100J03
C34	0070519	CAPACITR 120 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15FD121J03
C35	0081536	CAPACITR 5-50 PF MIN PC MT	1	EA	AE	73445	HT10MA/550
C36	0075417	CAPACITR .01 MF 150V CER DISC	1	EA	CRL	71590	DDM-103
C37	0070542	CAPACITR 680 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD19FD681J03
C38	0081923	CAPACITR 6 PF 500V CER DISC	1	EA	ER	72982	831-C0G0-609C
C39	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C40	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C41	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C42	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C43	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C44	0070517	CAPACITR 100 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15FD101J03
C45	0082004	CAPACITR 3.3 PF 100V CER DISC	1	EA	ER	72982	835-024-C0G0-339B
C46	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C47	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
CR1	0082311	DIODE MV3102 VARACTOR SIL RIBBON LEADS	1	EA	MOT	00000	MV3103
CR2	0077811	DIODE 1N4743A SI ZEN 13V 5% 1W	1	EA	MOT	80211	1N4743A
E1	0081766	CORE BEAD FERRITE 14 .138X.037X.150L	1	EA	STK	78488	57-1829
E2	0081766	CORE BEAD FERRITE 14 .138X.037X.150L	1	EA	STK	78488	57-1829
L1	0077484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	1	EA	M	76493	70F156A1
L2	0077484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	1	EA	M	76493	70F156A1
L3	0077484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	1	EA	M	76493	70F156A1
L4	0078200	INDUCTOR .1 UH SUBMIN SHLD ENCAP 10%	1	EA	NYT	72259	WEE-WEE .1
L5	0079113	INDUCTOR .18 UH SUBMIN UNSHLD MOLDED 10%	1	EA	NYT	72259	DD-.18
L6	0078200	INDUCTOR .1 UH SUBMIN SHLD ENCAP 10%	1	EA	NYT	72259	WEE-WEE .1
L7	0081662	INDUCTOR .1 UH SUBMIN UNSHLD 10%	1	EA	DP	91637	IR-2
L8	0079170	INDUCTOR .05 UH SUBMIN UNSHLD MOLDED 10%	1	EA	DP	00000	IM-2
L9	0079317	INDUCTOR 27 UH SUBMIN UNSHLD MOLDED 10%	1	EA	NYT	72259	DD-27
L10	0081745	INDUCTOR .27 UH SUBMIN UNSHLD 10%	1	EA	DP	91637	IR-2
L11	0077484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	1	EA	M	76493	70F156A1
Q1	0035669	TRANSSTR 2N5179 SIL NPN	1	EA	MOT	80211	2N5179
Q2	0082319	TRANSSTR MFE-121 MOSFET DUAL GATE	1	EA	MOT	00000	MFE 121
Q3	0035669	TRANSSTR 2N5179 SIL NPN	1	EA	MOT	80211	2N5179
Q4	0035669	TRANSSTR 2N5179 SIL NPN	1	EA	MOT	80211	2N5179
R1	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
R2	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
R3	0072019	RESISTOR 8.2K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G822KS
R4	0071973	RESISTOR 1.8K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G182KS
R5	0071989	RESISTOR 3.3K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G332KS
R6	0071862	RESISTOR 47 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G470KS
R7	0071931	RESISTOR 560 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G561KS
R8	0071938	RESISTOR 680 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G621KS
R9	0072113	RESISTOR 100K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G104KS
R10	0072088	RESISTOR 56K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G563KS
R11	0072059	RESISTOR 27K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G273KS
R12	0071973	RESISTOR 1.8K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G182KS
R13	0071926	RESISTOR 470 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G471KS
R14	0071982	RESISTOR 2.7K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G272KS
R15	0072026	RESISTOR 10K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G103KS
R16	0072165	RESISTOR 470K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G474KS
R17	0071879	RESISTOR 82 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G820KS
R18	0072054	RESISTOR 22K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G223KS
R19	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
R20	0072026	RESISTOR 10K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G103KS
R21	0072026	RESISTOR 10K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G103KS
R22	0071907	RESISTOR 220 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G221KS
R23	0071966	RESISTOR 1.5K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G152KS
R24	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
U1	0081795	IC BALANCED MIXER	1	EA	TI	01295	SN76514N
Y1	0082330	CRYSTAL 125.50 MHZ .0025% SERIES RES	1	EA	ERT	00000	HC/18U HOLDER
Y2	0082320	CRYSTAL 11.446 MHZ .0025% SERIES RES	1	EA	ERT	00000	HC/18U HOLDER

PARTS LIST

MODEL 6300PL HIGH-BAND ASSEMBLY, CHANNEL 12

COMP DESIG	S-A PART NUMBER	DESCRIPTION	QTY	UM	MFR	FSCM	MFR PART NO.
1	0123401	PC BOARD ASSY 6300PL PHASE LOCK BOARD	1	EA			
2	0125672	PC BOARD ASSY 6300PL HIGH BAND CH 12	1	EA			
3	0123464	PANEL FRONT 6300PL	1	EA			
4	0106037	HANDLE FRONT PANEL PLUG-IN	2	EA			
5	0106024	PLATE SLIDE PLUG-IN MODULATOR	1	EA			
6	0106022	PANEL SIDE PLUG-IN	1	EA			
7	0078531	CONN RECT BODY W/C CONTACTS 20 POS RECEP	1	EA	BDW	09922	MS20PM-61
8	0078532	CONN CONTACT MALE COAX CRIMP .1 D CABLE	4	EA	BDW	09922	RCDXK-1
9	0078535	CONN CONTACT FEMALE CRIMP NO. 24 WIRE	4	EA	BDW	09922	RC24M-9
10	0077322	SCREW 4-40 X 1/4 PAN HD,TAPTITE,CAD PLT	4	EA	CS	72228	BY DESCRIPTION
11	0072321	SCREW 4-40 X 3/8 F HD,82 DEG,SST	4	EA	XZ	00000	PER MS51959-15
12	0072310	SCREW 4-40 X 3/16 F HD,82 DEG,SST,UNDRCT	12	EA	XZ	00000	PER MS51959-12
13	0081882	LAMP LED FLV110 RED LENS	1	EA	FMP	00000	FLV110
14	0082315	LAMP LED MOUNTING CLIP FOR FLV117	1	EA	FMP	00000	FLS010
15	0105279	CHASSIS PLUG-IN RF CONNECTOR MODULATOR	1	EA			
16	0072861	SPACER 4-40 ID 3/16 OD 1/2 L NI PLT BRS	4	EA	FS	73734	9174
17	0072319	SCREW 4-40 X 5/16 PAN HD,SST	8	EA	XZ	00000	PER MS51957-14

PARTS LIST

MODEL 6300PL HIGH-BAND ASSEMBLY, CHANNEL 13

COMP DESIG	S-A PART NUMBER	DESCRIPTION	QTY	UM	MFR	FSCM	MFR PART NO.
1	0123465	PC BOARD RF	1	EA			
2	0125716	SCHEMATIC RF HIGH BAND 6300PL MODULATOR		EA			
C1	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C2	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C3	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C4	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C5	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C6	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C7	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C8	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C9	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C10	0070531	CAPACITR 270 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15FD271J03
C11	0035642	CAPACITR 2-18 PF MIN PC MT	1	EA	AE	73445	HT10KA/218
C12	0081923	CAPACITR 6 PF 500V CER DISC	1	EA	ER	72982	831-COGO-609C
C13	0080142	CAPACITR 20 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15ED200J
C14	0035641	CAPACITR 2-9 PF MIN PC MT	1	EA	AE	73445	HT10KA/29
C15	0073492	CAPACITR 15 PF 500V SILVER MICA 5%	1	EA	A	00656	ADM15C150J500
C16	0035760	CAPACITR 4 PF 500V CER DISC	1	EA	ER	72982	831-COHO-409C
C17	0076381	CAPACITR 1.5 PF 500V CER TUBULAR	1	EA	A	00656	CC20CK1R5C
C18	0035642	CAPACITR 2-18 PF MIN PC MT	1	EA	AE	73445	HT10KA/218
C19	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C20	0081536	CAPACITR 5-50 PF MIN PC MT	1	EA	AE	73445	HT10MA/550
C21	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C22	0035642	CAPACITR 2-18 PF MIN PC MT	1	EA	AE	73445	HT10KA/218
C23	0035641	CAPACITR 2-9 PF MIN PC MT	1	EA	AE	73445	HT10KA/29
C24	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C25	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C26	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C27	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C28	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C29	0081746	CAPACITR 1 PF 500V CER DISC	1	EA	ER	72982	831-COGO-109C
C30	0081536	CAPACITR 5-50 PF MIN PC MT	1	EA	AE	73445	HT10MA/550
C31	0075417	CAPACITR .01 MF 150V CER DISC	1	EA	CRL	71590	DDM-103
C32	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C33	0070470	CAPACITR 10 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15CD100J03
C34	0070519	CAPACITR 120 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15FD121J03
C35	0081536	CAPACITR 5-50 PF MIN PC MT	1	EA	AE	73445	HT10MA/550
C36	0075417	CAPACITR .01 MF 150V CER DISC	1	EA	CRL	71590	DDM-103
C37	0070542	CAPACITR 680 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD19FD681J03
C38	0081923	CAPACITR 6 PF 500V CER DISC	1	EA	ER	72982	831-COGO-609C
C39	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C40	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C41	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C42	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C43	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C44	0070517	CAPACITR 100 PF 500V SILVER MICA 5%	1	EA	CD	14655	CD15FD101J03
C45	0082004	CAPACITR 3.3 PF 100V CER DISC	1	EA	ER	72982	835-024-COGO-339B
C46	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
C47	0070549	CAPACITR .0015 MF 1KV CER DISC	1	EA	CRL	71590	DD152G
CR1	0082311	DIODE MV3102 VARACTOR SIL RIBBON LEADS	1	EA	MOT	00000	MV3103
CR2	0077811	DIODE 1N4743A SI ZEN 13V 5% 1W	1	EA	MOT	80211	1N4743A
E1	0081766	CORE BEAD FERRITE 14 .138X.037X.150L	1	EA	STK	78488	57-1829
E2	0081766	CORE BEAD FERRITE 14 .138X.037X.150L	1	EA	STK	78488	57-1829
L1	0077484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	1	EA	M	76493	70F156A1
L2	0077484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	1	EA	M	76493	70F156A1
L3	0077484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	1	EA	M	76493	70F156A1
L4	0078200	INDUCTOR .1 UH SUBMIN SHLD ENCAP 10%	1	EA	NYT	72259	WEE-WEE .1
L5	0079113	INDUCTOR .18 UH SUBMIN UNSHLD MOLDED 10%	1	EA	NYT	72259	DD-.18
L6	0078200	INDUCTOR .1 UH SUBMIN SHLD ENCAP 10%	1	EA	NYT	72259	WEE-WEE .1
L7	0081662	INDUCTOR .1 UH SUBMIN UNSHLD 10%	1	EA	DP	91637	IR-2
L8	0079170	INDUCTOR .05 UH SUBMIN UNSHLD MOLDED 10%	1	EA	DP	00000	IM-2
L9	0079317	INDUCTOR 27 UH SUBMIN UNSHLD MOLDED 10%	1	EA	NYT	72259	DD-27
L10	0081745	INDUCTOR .27 UH SUBMIN UNSHLD 10%	1	EA	DP	91637	IR-2
L11	0077484	INDUCTOR 1.5 UH SUBMIN UNSHLD 10%	1	EA	M	76493	70F156A1
Q1	0035669	TRANSSTR 2N5179 SIL NPN	1	EA	MOT	80211	2N5179
Q2	0082319	TRANSSTR MFE-121 MOSFET DUAL GATE	1	EA	MOT	00000	MFE 121
Q3	0035669	TRANSSTR 2N5179 SIL NPN	1	EA	MOT	80211	2N5179
Q4	0035669	TRANSSTR 2N5179 SIL NPN	1	EA	MOT	80211	2N5179
R1	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
R2	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
R3	0072019	RESISTOR 8.2K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G822KS
R4	0071973	RESISTOR 1.8K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G182KS
R5	0071989	RESISTOR 3.3K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G332KS
R6	0071862	RESISTOR 47 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G470KS
R7	0071931	RESISTOR 560 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G561KS
R8	0071938	RESISTOR 680 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G621KS
R9	0072113	RESISTOR 100K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G104KS
R10	0072088	RESISTOR 56K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G563KS
R11	0072059	RESISTOR 27K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G273KS
R12	0071973	RESISTOR 1.8K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G182KS
R13	0071926	RESISTOR 470 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G471KS
R14	0071982	RESISTOR 2.7K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G272KS
R15	0072026	RESISTOR 10K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G103KS
R16	0072165	RESISTOR 470K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G474KS
R17	0071879	RESISTOR 82 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G820KS
R18	0072054	RESISTOR 22K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G223KS
R19	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
R20	0072026	RESISTOR 10K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G103KS
R21	0072026	RESISTOR 10K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G103KS
R22	0071907	RESISTOR 220 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G221KS
R23	0071966	RESISTOR 1.5K OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G152KS
R24	0071836	RESISTOR 10 OHM 1/4W 10% COMP	1	EA	AB	01121	RCR07G100KS
U1	0081795	IC BALANCED MIXER	1	EA	TI	01295	SN76514N
Y1	0082331	CRYSTAL 128.50 MHZ .0025% SERIES RES	1	EA	ERT	00000	HC/18U HOLDER
Y2	0082320	CRYSTAL 11.446 MHZ .0025% SERIES RES	1	EA	ERT	00000	HC/18U HOLDER

PARTS LIST

MODEL 6300PL HIGH-BAND ASSEMBLY, CHANNEL 13

COMP DESIG	S-A PART NUMBER	DESCRIPTION	QTY	UM	MFR	FSCM	MFR PART NO.
1	0123401	PC BOARD ASSY 6300PL PHASE LOCK BOARD	1	EA			
2	0125673	PC BOARD ASSY 6300PL HIGH BAND CH 13	1	EA			
3	0123464	PANEL FRONT 6300PL	1	EA			
4	0106037	HANDLE FRONT PANEL PLUG-IN	2	EA			
5	0106024	PLATE SLIDE PLUG-IN MODULATOR	1	EA			
6	0106022	PANEL SIDE PLUG-IN	1	EA			
7	0078531	CONN RECT BODY W/C CONTACTS 20 POS RECEP	1	EA	BDW	09922	MS20PM-61
8	0078532	CONN CONTACT MALE COAX CRIMP .1 C CABLE	4	EA	BDW	09922	RCDXK-1
9	0078535	CONN CONTACT FEMALE CRIMP NO. 24 WIRE	4	EA	BDW	09922	RC24M-9
10	0077322	SCREW 4-40 X 1/4 PAN HD,TAPTITE,CAD PLT	4	EA	CS	72228	BY DESCRIPTION
11	0072321	SCREW 4-40 X 3/8 F HD,82 DEG,SST	4	EA	XZ	00000	PER MS51959-15
12	0072310	SCREW 4-40 X 3/16 F HD,82 DEG,SST,UNDRCT	12	EA	XZ	00000	PER MS51959-12
13	0081882	LAMP LED FLV110 RED LENS	1	EA	FMP	00000	FLV110
14	0082315	LAMP LED MOUNTING CLIP FOR FLV117	1	EA	FMP	00000	FLS010
15	0105279	CHASSIS PLUG-IN RF CONNECTOR MODULATOR	1	EA			
16	0072861	SPACER 4-40 ID 3/16 OD 1/2 L NI PLT BRS	4	EA	FS	73734	9174
17	0072319	SCREW 4-40 X 5/16 PAN HD,SST	8	EA	XZ	00000	PER MS51957-14

MANUFACTURERS' CODES

FSCM	Code	Manufacturer
00656	A	Aerovox
01121	AB	Allen-Bradley
01295	TI	Texas Instruments
09021	ASE	Airco Speer Elec Components
09922	BDW	Burndy
14655	CD	Cornell-Dubilier Electric
71590	CRL	Centralab
72228	CS	Continental Screw
72259	NYT	Nytronics
72982	ER	Erie Resistor
73445	AE	Amperex Electronic
73734	FS	Federal Screw Products
76493	M	J. W. Miller
78488	STK	Stackpole Carbon-Magnet Division
79089	RCA	Radio Corporation of America
80211	MOT	Motorola
80368	SY	Sylvania
91637	DP	Dale Products

PARTS-LIST ABBREVIATIONS

Word	Abbreviation
action	act
alternating current	ac
ampere	A
amplifier	ampl
capacitance	cap
capacitor	cap
carbon film	carflm
cathode-ray tube	CRT
center-tapped	CT
ceramic	cer
composition	comp
contact (s)	cont
control differential transmitter	CDX
control transformer	CT
crystal	xtal
cycles per second	Hz
direct current	dc
electrolytic	elect
factory selected	f/s
factory set	f/s
farad	F
feedthrough	fthru
female	fem
fixed	fxd
germanium	Ge
henry	H
incandescent	inc
internal	int
kilohm(s)	kΩ
latch(ing), mechanical	latch
medium-lag	ML
megohm(s)	MΩ
metal film	metflm
metallized paper	metpap
mica	mica
micro	μ
microampere(s)	μA
microfarad(s)	μF
microhenry(ies)	μH
microvolt(s)	μV
milliampere(s)	mA
millihenry(ies)	mH
millivolt(s)	mV
momentary	mom
motor	mot
mounted or mounting	mtg
Mylar	myl
non-polarized	NP
non-shorting	nsh
normally closed	NC
normally open	NO
ohm(s)	Ω
otherwise specified	O/S
panel	pnl
paper	pap
picofarad	pF
pole(s)	pol
polystyrene	ps
position(s)	pos
power	pwr
primary	pri
printed circuit	PC
protection	prot
protector	prot
pushbutton	pushb
receiver(s)	rcvr
receptacle(s)	recep
resistance	res
resistor	res
rotary	rot
second(s)	s
secondary	sec
selector	sel
shorting	sh
silicon	Si
silicon controlled rectifier	SCR
silicon controlled switch	SC sw
silver mica	smic
slow-blow	SB
subminiature	submin
switch (es) (ed)	sw
tachometer	tach
toggle	tog
transmitter	xtr
tunnel	tnl
value(s)	val
variable	var
volt(s) (age)	V
watt(s)	W
wirewound	ww
Zener	Zen

CONVERSION OF VOLTAGE AND POWER RATIOS TO DECIBELS

The basic chart below indicates the number of decibels (dB) corresponding to the listed ratios of voltage or power over the range of −20 to +20 dB. For voltage or power ratios greater than those included in the chart, the ratio can be broken down into a product of two numbers, the value in dB for each found separately, and the two results added. Example: To convert a power ratio of 2,000:1 to dB, express 2,000 as 2×10^3; the number of dB corresponding to a power ratio of 2 is very nearly 3, and the number of dB for a power ratio of 10^3 is 30. Therefore, the power ratio of 2,000:1 is approximately 30 dB + 3 dB = 33 dB. In the lower righthand corner of the chart dB values for voltage and power ratios of integral powers of 10 are given.

Voltage Ratio	*Power Ratio*	*−dB+*	*Voltage Ratio*	*Power Ratio*	*Voltage Ratio*	*Power Ratio*	*−dB+*	*Voltage Ratio*	*Power Ratio*	*Voltage Ratio*	*Power Ratio*	*−dB+*	*Voltage Ratio*	*Power Ratio*
1.000	**1.000**	**0**	**1.000**	**1.000**	**.447**	**.200**	**7.0**	**2.239**	**5.012**	**.200**	**.0398**	**14.0**	**5.012**	**25.12**
.989	.977	.1	1.012	1.023	.442	.195	7.1	2.265	5.129	.197	.0389	14.1	5.070	25.70
.977	.955	.2	1.023	1.047	.437	.191	7.2	2.291	5.248	.195	.0380	14.2	5.129	26.30
.966	.933	.3	1.035	1.072	.432	.186	7.3	2.317	5.370	.193	.0372	14.3	5.188	26.92
.955	.912	.4	1.047	1.096	.427	.182	7.4	2.344	5.495	.191	.0363	14.4	5.248	27.54
.944	.891	.5	1.059	1.122	.422	.178	7.5	2.371	5.623	.188	.0355	14.5	5.309	28.18
.933	.871	.6	1.072	1.148	.417	.174	7.6	2.399	5.754	.186	.0347	14.6	5.370	28.84
.923	.851	.7	1.084	1.175	.412	.170	7.7	2.427	5.888	.184	.0339	14.7	5.433	29.51
.912	.832	.8	1.096	1.202	.407	.166	7.8	2.455	6.026	.182	.0331	14.8	5.495	30.20
.902	.813	.9	1.109	1.230	.403	.162	7.9	2.483	6.166	.180	.0324	14.9	5.559	30.90
.891	**.794**	**1.0**	**1.122**	**1.259**	**.398**	**.159**	**8.0**	**2.512**	**6.310**	**.178**	**.0316**	**15.0**	**5.623**	**31.62**
.881	.776	1.1	1.135	1.288	.394	.155	8.1	2.541	6.457	.176	.0309	15.1	5.689	32.36
.871	.759	1.2	1.148	1.318	.389	.151	8.2	2.570	6.607	.174	.0302	15.2	5.754	33.11
.861	.741	1.3	1.161	1.349	.385	.148	8.3	2.600	6.761	.172	.0295	15.3	5,821	33.88
.851	.724	1.4	1.175	1.380	.380	.145	8.4	2.630	6.918	.170	.0288	15.4	5.888	34.67
.841	.708	1.5	1.189	1.413	.376	.141	8.5	2.661	7.079	.168	.0282	15.5	5.957	35.48
.832	.692	1.6	1.202	1.445	.372	.138	8,6	2.692	7.244	.166	.0275	15.6	6.026	36.31
.822	.676	1.7	1.216	1.479	.367	.135	8.7	2.723	7.413	.164	.0269	15.7	6.095	37.15
.813	.661	1.8	1.230	1.514	.363	.132	8.8	2.754	7.586	.162	.0263	15.8	6.166	38.02
.804	.646	1.9	1.245	1.549	.359	.129	8.9	2.786	7.762	.160	.0257	15.9	6.237	38.90
.794	**.631**	**2.0**	**1.259**	**1.585**	**.355**	**.126**	**9.0**	**2.818**	**7.943**	**.159**	**.0251**	**16.0**	**6.310**	**39.81**
.785	.617	2.1	1.274	1.622	.351	.123	9.1	2.851	8.128	.157	.0246	16.1	6.383	40.74
.776	.603	2.2	1.288	1.660	.347	.120	9.2	2.884	8.318	.155	.0240	16.2	6.457	41.69
.767	.589	2.3	1.303	1.698	.343	.118	9.3	2.917	8.511	.153	.0234	16.3	6.531	42.66
.759	.575	2.4	1.318	1.738	.339	.115	9.4	2.951	8.710	.151	.0229	16.4	6.607	43.65
.750	.562	2.5	1.334	1.778	.335	.112	9.5	2.985	8.913	.150	.0224	16.5	6.683	44.67
.741	.550	2.6	1.349	1.820	.331	.110	9.6	3.020	9.120	.148	.0219	16.6	6.761	45.71
.733	.537	2.7	1.365	1.862	.327	.107	9.7	3.055	9.333	.146	.0214	16.7	6.839	46.77
.724	.525	2.8	1.380	1.905	.324	.105	9.8	3.090	9.550	.145	.0209	16.8	6.918	47.86
.716	.513	2.9	1.396	1.950	.320	.102	9.9	3.126	9.772	.143	.0204	16.9	6.998	48.98
.708	**.501**	**3.0**	**1.413**	**1.995**	**.316**	**.100**	**10.0**	**3.162**	**10.000**	**.141**	**.0200**	**17.0**	**7.079**	**50.12**
.700	.490	3.1	1.429	2.042	.313	.0977	10.1	3.199	10.23	.140	.0195	17.1	7.161	51.29
.692	.479	3.2	1.445	2.089	.309	.0955	10.2	3.236	10.47	.138	.0191	17.2	7.244	52.48
.684	.468	3.3	1.462	2.138	.306	.0933	10.3	3.273	10.72	.137	.0186	17.3	7.328	53.70
.676	.457	3.4	1.479	2.188	.302	.0912	10.4	3.311	10.96	.135	.0182	17.4	7.413	54.95
.668	.447	3.5	1.496	2.239	.299	.0891	10.5	3.350	11.22	.133	.0178	17.5	7.499	56.23
.661	.437	3.6	1.514	2.291	.295	.0871	10.6	3.388	11.48	.132	.0174	17.6	7.586	57.54
.653	.427	3.7	1.531	2.344	.292	.0851	10.7	3.428	11.75	.130	.0170	17.7	7.674	58.88
.646	.417	3.8	1.549	2.399	.288	.0832	10.8	3.467	12.02	.129	.0166	17.8	7.762	60.26
.638	.407	3.9	1.567	2.455	.285	.0813	10.9	3.508	12.30	.127	.0162	17.9	7.852	61.66
.631	**.398**	**4.0**	**1.585**	**2.512**	**.282**	**.0794**	**11.0**	**3.548**	**12.59**	**.126**	**.0159**	**18.0**	**7.943**	**63.10**
.624	.389	4.1	1.603	2.570	.279	.0776	11.1	3.589	12.88	.125	.0155	18.1	8.035	64.57
.617	.380	4.2	1.622	2.630	.275	.0759	11.2	3.631	13.18	.123	.0151	18.2	8.128	66.07
.610	.372	4.3	1.641	2.692	.272	.0741	11.3	3.673	13.49	.122	.0148	18.3	8.222	67.61
.603	.363	4.4	1.660	2.754	.269	.0724	11.4	3.715	13.80	.120	.0145	18.4	8.318	69.18
.596	.355	4.5	1.679	2.818	.266	.0708	11.5	3.758	14.13	.119	.0141	18.5	8.414	70.79
.589	.347	4.6	1.698	2.884	.263	.0692	11.6	3.802	14.45	.118	.0138	18.6	8.511	72.44
.582	.339	4.7	1.718	2.951	.260	.0676	11.7	3.846	14.79	.116	.0135	18.7	8.610	74.13
.575	.331	4.8	1.738	3.020	.257	.0661	11.8	3.890	15.14	.115	.0132	18.8	8.710	75.86
.569	.324	4.9	1.758	3.090	.254	.0646	11.9	3.936	15.49	.114	.0129	18.9	8.811	77.62
.562	**.316**	**5.0**	**1.778**	**3.162**	**.251**	**.0631**	**12.0**	**3.981**	**15.85**	**.112**	**.0126**	**19.0**	**8.913**	**79.43**
.556	.309	5.1	1.799	3.236	.248	.0617	12.1	4.027	16.22	.111	.0123	19.1	9.016	81.28
.550	.302	5.2	1.820	3.311	.246	.0603	12.2	4.074	16.60	.110	.0120	19.2	9.120	83.18
.543	.295	5.3	1.841	3.388	.243	.0589	12.3	4.121	16.98	.108	.0118	19.3	9.226	85.11
.537	.288	5.4	1.862	3.467	.240	.0575	12.4	4.169	17.38	.107	.0115	19.4	9.333	87.10
.531	.282	5.5	1.884	3.548	.237	.0562	12.5	4.217	17.78	.106	.0112	19.5	9.441	89.13
.525	.275	5.6	1.905	3.631	.234	.0550	12.6	4.266	18.20	.105	.0110	19.6	9.550	91.20
.519	.269	5.7	1.928	3.715	.232	.0537	12.7	4.315	18.62	.104	.0107	19.7	9.661	93.33
.513	.263	5.8	1.950	3.802	.229	.0525	12.8	4.365	19.05	.102	.0105	19.8	9.772	95.50
.507	.257	5.9	1.972	3.890	.227	.0513	12.9	4.416	19.50	.101	.0102	19.9	9.886	97.72
.501	**.251**	**6.0**	**1.995**	**3.981**	**.224**	**.0501**	**13.0**	**4.467**	**19.95**	**.100**	**.0100**	**20.0**	**10.000**	**100.00**
.496	.246	6.1	2.018	4.074	.221	.0490	13.1	4.519	20.42		10^{-3}	30		10^3
.490	.240	6.2	2.042	4.169	.219	.0479	13.2	4.571	20.89	10^{-2}	10^{-4}	40	10^2	10^4
.484	.234	6.3	2.065	4.266	.216	.0468	13.3	4.624	21.38		10^{-5}	50		10^5
.479	.229	6.4	2.089	4.365	.214	.0457	13.4	4.677	21.88	10^{-3}	10^{-6}	60	10^3	10^6
.473	.224	6.5	2.113	4.467	.211	.0447	13.5	4.732	22.39		10^{-7}	70		10^7
.468	.219	6.6	2.138	4.571	.209	.0437	13.6	4.786	22.91	10^{-4}	10^{-8}	80	10^4	10^8
.462	.214	6.7	2.163	4.677	.207	.0427	13.7	4.842	23.44		10^{-9}	90		10^9
.457	.209	6.8	2.188	4.786	.204	.0417	13.8	4.898	23.99	10^{-5}	10^{-10}	100	10^5	10^{10}
.452	.204	6.9	2.213	4.898	.202	.0407	13.9	4.955	24.55		10^{-11}	110		10^{11}
										10^{-6}	10^{-12}	120	10^6	10^{12}

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